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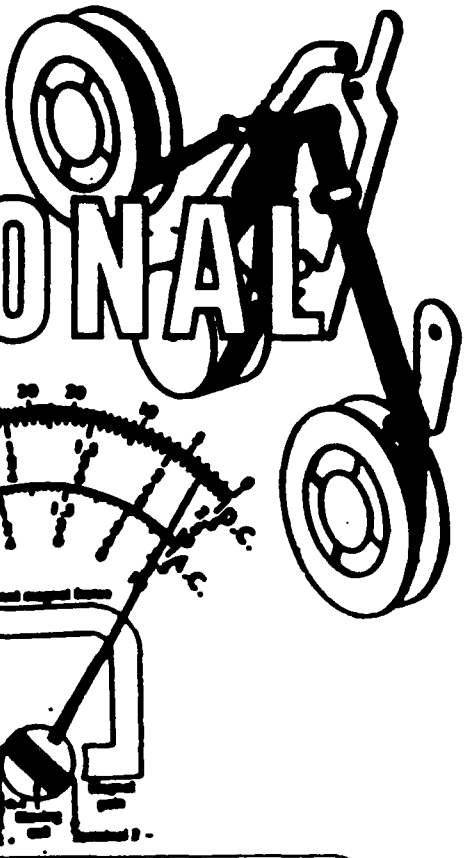

OCCUPATIONAL SURVEY REPORT

TELEVISION EQUIPMENT REPAIR CAREER LADDER

AFSC 304X5

AFPT 90-304-783

JANUARY 1989

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150-5000

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PREFACE

This report presents the results of an Air Force occupational survey of the Television Equipment Repair career ladder (AFSC 304X5). Authority for conducting occupational surveys is contained in AFR 35-2. Computer products upon which this report is based are available for use by operations and training officials.

The survey instrument was developed by Chief Master Sergeant Anthony J. O'Flaherty, Inventory Development Specialist. Mr Wayne Fruge, Computer Programmer, provided computer support for this project. Administrative support was provided by Mr Richard G. Ramos. First Lieutenant Michael A. Solorio and Second Lieutenant Lisa A. Boyce analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Charles D. Gorman, Chief, Airman Analysis Branch, USAF Occupational Measurement Center.

Copies of this report are distributed to Air Staff sections, Major Commands, and other interested training management personnel (see distribution on page i). Additional copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB, Texas 78150-5000.

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SUMMARY OF RESULTS

1. Survey Coverage: Survey results are based on responses from 441 Television Equipment Repair specialists (AFSC 304X5). This represents 67 percent of all assigned 304X5 airmen. Incumbents were surveyed across various major commands and include only 3-, 5-, and 7-skill level personnel.

2. Career Ladder Structure: Five clusters and two independent job types are identified in the AFSC 304X5 specialty. The career ladder structure is organized around the different missions which AFSC 304X5 airmen support. The largest job, Production/Broadcasting Maintenance Technicians, supports both Armed Forces Radio and Television Service (AFRTS) and Audio Visual Information Service (AVIS) missions. The other jobs include RAM/Weathervision Technicians, Television Ordnance Scoring System (TOSS) Specialists, Video Tape Recorder (VTR) Technicians, and General Television Equipment Repairmen. Nontechnical functions, such as supervisory and managerial tasks, are primarily performed by Maintenance Supervisors and Management Personnel jobs.

3. Career Ladder Progression: Both 3- and 5-skill level personnel are performing jobs primarily technical in nature, with little responsibility for supervision and management. Seven-skill level airmen reflect a sharp decline in the time spent performing technical tasks, while supervisory responsibilities increase substantially.

4. AFR 39-1 Specialty Descriptions: The descriptions in AFR 39-1 for the AFSC 304X5 Television Equipment Repair career ladder provide a broad and accurate overview of tasks and duties performed by each specialty job, with the exception of operating functions.

5. Training Analysis: A review of the AFSC 304X5 training documents reveals most areas are supported by survey data. Specifically, only six elements in both the Specialty Training Standard (STS) and Course Training Standards (CTS) have less than 20 percent of the appropriate AFSC 304X5 airmen performing related tasks. Similarly, all tasks matched to Plan of Instruction (POI) objectives have greater than 30 percent of first-enlistment personnel performing, accounting for 290 course hours. However, over 200 tasks with sufficient members performing are not referenced to the STS and CTS. Several tasks with greater than 30 percent performance levels are also not referenced to the POI. Overall, survey data suggests that a review of the training documents is necessary.

6. Job Satisfaction: Overall, respondents are generally satisfied with their jobs. Production/Broadcasting Maintenance Technicians responded with the highest overall percentages of satisfied members across four indicators, while RAM/Weathervision Technicians and TOSS Specialists indicated relatively lower overall satisfaction. Job satisfaction is similar or slightly lower between the TV Equipment Repair career ladder and a comparative sample of Mission Equipment Maintenance personnel surveyed in 1987. All AFSC 304X5 enlistment groups perceive lower utilization of their training than their

counterparts in the comparative sample. However, levels of satisfaction in the current survey show a higher view of job satisfaction and utilization of talents and training than was noted in the 1979 OSR.

7. MAJCOM Analysis: Analysis identifies no unexpected differences between MAJCOMs. Dissimilarities are due to the distinguishing tasks performed to support certain missions. The major distinction is noted between Alaskan Air Command (AAC), Air Training Command (ATC), and the remaining commands. AAC is primarily involved with the TOSS mission, while ATC revolves around training. Each requires certain unique, discriminating tasks for support.

8. Implications: The AFSC 304X5 career ladder is fairly diverse, with a variety of tasks relating to specific missions being performed by several groups of individuals across the ladder. The AFR 39-1 job descriptions generally are adequate for the 3-, 5-, and 7-skill levels, but should be reviewed for possible inclusion of operation functions. In terms of training documents, few but significant discrepancies are noted. The STS and CTS contain elements not supported, as well as overly broad paragraphs and objectives. Also, several high performance tasks are not referenced to the STS, CTS, and POI. A Utilization and Training Workshop (U&TW) is recommended to review the STS, CTS, and POI. Job satisfaction is positive for the jobs identified, except for the relatively lower levels noted by RAM/Weathervision and TOSS personnel. When compared to other Mission Equipment Maintenance personnel, AFSC 304X5 members show similar or slightly lower levels of satisfaction. Conversely, marked improvement in satisfaction levels are noted when compared to previous OSR data published in 1979.

OCCUPATIONAL SURVEY REPORT
TELEVISION EQUIPMENT REPAIR CAREER LADDER
(AFSC 304X5)

INTRODUCTION

This is a report of an occupational survey of personnel in the Television Equipment Repair career ladder completed by the Occupational Analysis Division, USAF Occupational Measurement Center, in November 1988. The last occupational survey of this career ladder was conducted in October 1979. This survey was requested by the 3400th Technical Training Wing, Lowry Technical Training Center. The primary purpose of conducting the survey was to collect current data to assist in evaluating major changes in equipment and manpower experienced in the AFSC 304X5 career ladder since the last OSR. A tentative STS is awaiting updated information concerning these changes before publication. The survey data will also impact current CDC and POI revision efforts.

Background

According to AFR 39-1 Specialty Descriptions for AFSC 304X5, dated 1 Feb 88, Television Equipment Repair specialists install, perform preventive maintenance, repair, monitor, analyze, and record television equipment and systems performance. In addition, 7-skill level personnel direct performance checks and coordinate activities with production agencies.

The majority of AFSC 304X5 airmen work in one of four functional areas: General TV equipment repair, Production/Broadcasting equipment repair, RAM/Weathervision repair, or Television Ordnance Scoring System (TOSS) repair. General TV equipment repairmen normally are responsible for typical TV and related equipment located on Air Force bases, such as video tape recorders and color TV monitors and receivers. Production/Broadcasting maintenance personnel are assigned in studios both CONUS and overseas to maintain Audio Visual Information Service (AVIS) and Armed Forces Radio and Television Service (AFRTS) equipment. RAM/Weathervision technicians maintain closed circuit television (CCTV) systems that display weather information for aircrews and base weather personnel. TOSS maintenance personnel are located on Air Force installations which act as gunnery ranges for combat aircraft.

The AFSC 304X5 technical school, located at Lowry AFB CO, is a Joint Service School with Army, Navy, and Air Force students and instructors. An Armed Forces Vocational Aptitude Battery (ASVAB) electronics score of "67" is required for entry into the Television Equipment Repair specialty. Initial training consists of an electronics principles (EP) course, Course G3AZR32000-00, which is 16 weeks and 3 days long. The student washout rate from this course is approximately 15 percent. Following successful completion

of this Category "A" training, students attend Course G3ABR30435, which is 28 weeks in duration. Because of the EP weed-out process, the elimination rate in the AFSC 30435 course is, historically, only 2 percent.

For FY 87, there was a total student load of 129 for both Air Force and Army; of this total, Air Force was scheduled to receive approximately 80 slots. The projected Air Force student flow for FY 89 and 90 is 0 and 10, respectively.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-304-783. A preliminary task list was prepared by the Inventory Developer after carefully reviewing the previous task list, current career ladder publications, training documents, and directives to determine the appropriateness of each task. This tentative task list was refined and validated in the ladder through personal interviews with 65 subject-matter experts representing 13 operational bases. To ensure full coverage of the variety of tasks performed by career ladder members, representative bases were identified according to their uniqueness or diversity of functions performed. Operational units housed at the following bases were visited:

BASE	RATIONALE FOR VISIT
Lowry AFB CO	Technical Training Center
Maxwell AFB AL	Large studio facilities; support Air University
Keesler AFB MS	Studio facilities; support Technical Training Center
Patrick AFB FL	Small studio facilities
Avon Park AFS FL	Television Ordnance Scoring System unit
Tyndall AFB FL	Services RAM/Weathervision system
Torrejon AB SP	Radio/TV Broadcast capabilities
Iraklion AFS GR	Satellite up-link capability
Ramstein AB GE	Parent unit for USAFE Detachments
Eielson AFB AK	Television Ordnance Scoring System unit

Clark AB PI	AM/FM, TV, and Microwave facility
Pilsung Range KOR	Television Ordnance Scoring system
Yokota AB JA	Satellite down-link and lead station for Pacific Regional Radio and TV Productions

Other significant contacts with personnel having career ladder involvement included classification, training, and resource managers; the Air Force functional manager; and the HQ ATC Training Staff Officer.

This process resulted in a final job inventory containing 641 tasks organized under 18 duty headings. Also included was a background section requesting such information as grade, time in service, job satisfaction, reenlistment intentions, functional area, position title, formal courses completed, equipment currently worked on, and test equipment used.

Survey Administration

From February through April 1988, Consolidated Base Personnel Offices (CBPO) at operational bases worldwide administered the inventory to all eligible DAFSC 304X5 personnel. Members eligible for the survey consisted of the total assigned population, excluding the following: (1) hospitalized personnel; (2) members in transition for a permanent change of station; (3) members retiring during the time inventories were administered to the ladder; and (4) members in their job less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL).

Each individual who filled out an inventory booklet first completed an identification and biographical information section, and then checked each task performed in their current job. Next, members rated these tasks on a 9-point scale showing relative time spent on each task as compared to all other tasks checked. Ratings ranged from 1 (very small amount of time spent) to 9 (very large amount of time spent).

To determine relative percent time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job. The rating for each task is divided by the sum of all the ratings, then multiplied by 100 to provide a relative percentage of time for each task. This procedure provides the basis for comparing tasks in terms of both percent members performing and average relative percent time spent.

Survey Sample

Personnel were selected to participate in this survey to ensure accurate representation across major commands (MAJCOM) and paygrade groups. Table 1 displays the MAJCOM distribution of survey respondents corresponding with the

TABLE 1

COMMAND REPRESENTATION OF SURVEY SAMPLE
AFSC 304X5

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
AFCC	48	44
MAC	20	22
AFSINC	13	15
ATC	3	2
AF ELEMENTS (OTHER)	3	4
AFSC	3	4
AAC	2	2
OTHER	8	7
TOTAL	100%	100%

Total Assigned:	660*
Total Eligible for Survey:	552**
Total in Sample:	441
Percent of Assigned in Sample:	67%
Percent of Eligible in Sample:	80%

* Assigned strength as of January 1988
** Excludes those in PCS, retirement, discharge, or hospital status; and those with less than 6 weeks on the job

percent of assigned personnel as of January 1988. In addition, Table 2 displays survey respondents across paygrade groups. As illustrated in these tables, the survey sample is representative and comprehensive.

Task Factor Administration

Selected senior personnel completed a second booklet in addition to the job inventory booklet. This second booklet is used to gather information for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets are processed separately from the job inventories and provide task rating information which is used in a number of different analyses discussed in more detail in the following section of this report.

Task Difficulty (TD). Task difficulty is defined as the length of time an average airman needs to learn a task. Given this definition, 36 senior technicians rated the difficulty of all the inventory tasks on a 9-point scale (from extremely low to extremely high). To ensure the validity of the ratings, each technician's rating was compared to those of every other senior technician's rating. A statistical measurement of their agreement, known as the interrater reliability (as assessed through components of variance of standard group means), was computed at .94, indicating high agreement among these raters. TD ratings were adjusted so tasks of average difficulty would have ratings of 5.00. The resulting data are essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

Training Emphasis (TE). Training emphasis is a rating of which tasks require structured training for first-term personnel. Experienced technicians (primarily 7-skill level) completing TE booklets were asked to rate tasks on a 10-point scale (from no training emphasis to extremely high training emphasis). Ratings for first-term personnel were independently collected from 39 NCOs. To ensure validity of the ratings, each technician's ratings were compared to those of every other senior technician's ratings. A statistical measurement of their agreement, known as the interrater reliability (as assessed through components of variance of standard group means), was computed at .94, indicating high agreement among these raters. The average TE rating is 2.70, with a standard deviation of 1.59. These data also provide essentially a rank ordering of tasks, whereby those with the highest ratings are perceived as most important for structured training.

TE ratings provide objective information which should be used along with task difficulty and percent members performing data when making training decisions. Percent members performing data provide information on how many personnel perform the tasks, TE and TD ratings provide insights on which tasks need training. Using these factors, in conjunction with appropriate training documents and directives, career ladder managers can tailor training programs to accurately reflect the needs of the user by more effectively determining when, where, and how to train first-enlistment AFSC 304X5 personnel.

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE
AFSC 304X5

PAYGRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
AIRMAN	23	22
E-4	29	29
E-5	25	24
E-6	15	16
E-7	8	8

* Assigned strength as of January 1988
NOTE: Columns may not add up to 100 percent due to rounding

Data Processing and Analysis

Once job inventories are returned from the ladder, task responses and background information are optically scanned. Other biographical information (such as name, base, etc.) are entered onto disks and transferred directly to the computer. Once both sets of data are in the computer, they are merged to form a complete case record for each respondent. Computer-generated programs, using Comprehensive Occupational Data Analysis Program (CODAP) techniques, are then applied to the data.

CODAP produces composite job descriptions for respondents based on their ratings of specific inventory tasks. These job descriptions provide information on percent members performing each task, the relative average percent time spent performing tasks, and the cumulative percent time spent by all members performing tasks in the inventory. In addition to the job descriptions based upon inventory task data, the program produces summaries that show how members of each group responded to each background item. Background items aid in identifying characteristics of the group, such as DAFSCs represented, time in career ladder, total active federal military service (TAFMS), experience in various functional areas, equipment operated, and job satisfaction levels.

SPECIALTY JOBS
(Career Ladder Structure)

A key aspect of the USAF occupational analysis program is to examine the job structure of a career ladder. Based on incumbent responses to survey questions, the tasks performed by career ladder personnel are examined and jobs are identified based on the similarity of tasks and the relative time they spend performing the tasks. The resulting job structure is then compared to official career ladder documents. This information can be used to examine the accuracy and completeness of career ladder documents (AFR 39-1 Specialty Descriptions and Specialty Training Standards) and to gain an understanding of current utilization patterns.

For this report, the career ladder structure is described in terms of clusters and independent job types. The job type is the basic unit of job analysis. It represents a specific group of individuals performing basically the same tasks and spending similar amounts of time on those tasks. When job type members perform tasks in common with other groups, they merge to form a larger unit of related jobs termed a cluster. Specialized job types too dissimilar to fit within a cluster are labeled independent job types (IJT).

Structure Overview

The specialty job structure of the Television Equipment Repair career ladder was determined by performing a job type analysis of the survey data provided by the 441 survey respondents. The jobs performed by these airmen separated into five clusters and two independent job types, as shown in Figure 1.

The five clusters and two independent job types are listed below. The stage (STG) number beside each title is a computer-generated reference number. The letter "N" stands for the number of personnel in each group.

I. GENERAL TELEVISION EQUIPMENT REPAIRMEN CLUSTER (STG056, N=63)

II. PRODUCTION/BROADCASTING MAINTENANCE TECHNICIANS CLUSTER (STG059, N=155)

III. MAINTENANCE SUPERVISORS IJT (STG082, N=25)

IV. RAM/WEATHERVISION TECHNICIANS CLUSTER (STG061, N=29)

V. TELEVISION ORDNANCE SCORING SYSTEM SPECIALISTS CLUSTER (STG072, N=48)

VI. VIDEO TAPE RECORDER TECHNICIANS IJT (STG052, N=6)

VII. MANAGEMENT PERSONNEL CLUSTER (STG020, N=52)

Eighty-six percent of the survey respondents are represented in the above job groups. The remaining 14 percent performed jobs that did not group with any of the defined jobs. Brief descriptions of each cluster and independent job type are presented below. In addition, Table 3 provides selected background information across these jobs, while Appendix A lists common tasks performed by incumbents in these groups.

Descriptions of Career Ladder Jobs

I. GENERAL TELEVISION EQUIPMENT REPAIRMEN CLUSTER (STG056, N=63). This group of 63 airmen represents 14 percent of the total survey sample. They perform general camera maintenance functions, with emphasis on video tape recorders and color TV monitors and receivers. Of the average 87 tasks performed by these airmen, representative tasks include:

remove or replace components, such as transistors or capacitors
perform operational checks on receiver/monitor operating controls, such as brightness or contrast

AFSC 304X5 CAREER LADDER STRUCTURE

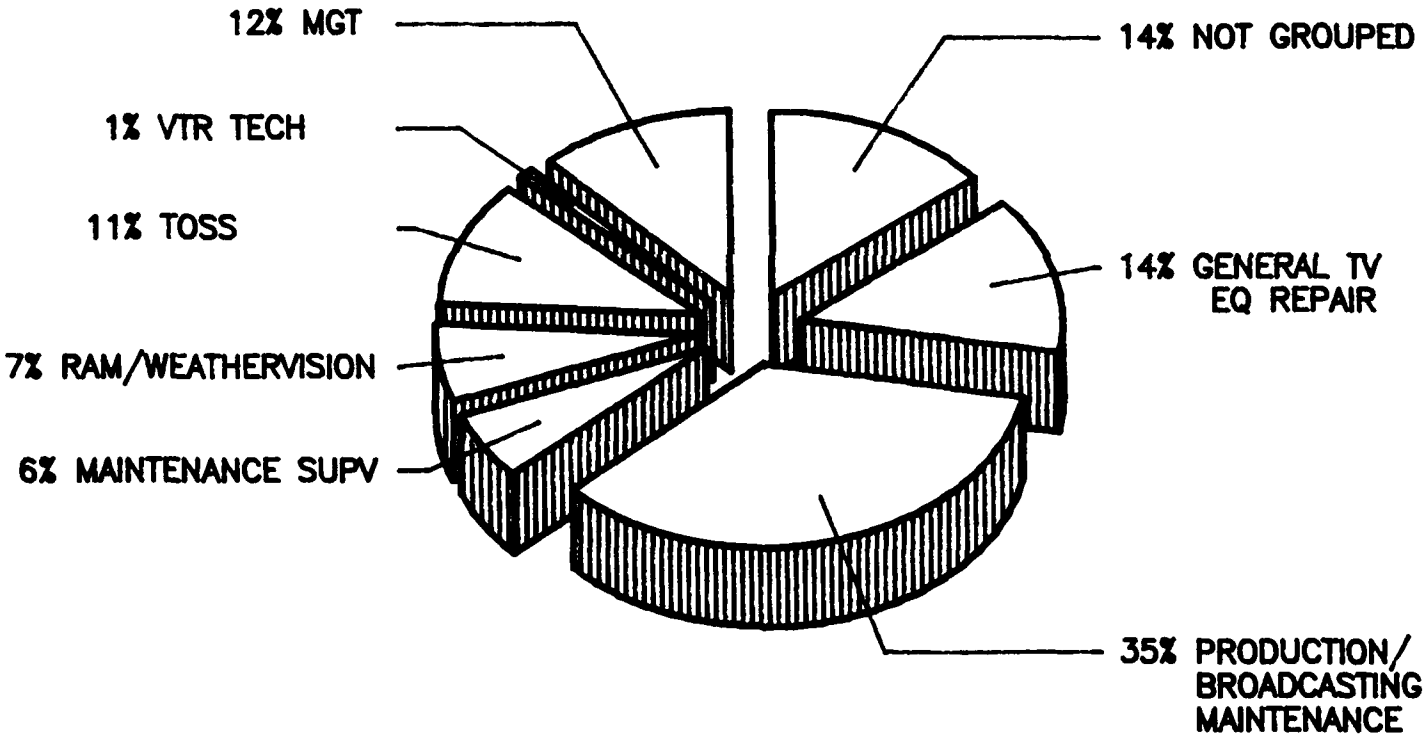

FIGURE 1

TABLE 3

SELECTED BACKGROUND DATA FOR CAREER LADDER JOBS

	GEN TV EQUIP RPRMN CLUSTER (STG056)	PRODUCTION/ BROADCASTING MAINT TECHNS CLUSTER (STG059)	MAINT SUPVRS IJT (STG082)	RAM/ WEATHERVISION TECHNS CLUSTER (STG061)
NUMBER IN GROUP	63	155	25	29
PERCENT OF SAMPLE	14%	35%	6%	7%
PERCENT IN CONUS	92%	64%	72%	86%
DAFSC DISTRIBUTION (PERCENT):				
30435	25%	3%	0%	24%
30455	73%	66%	24%	72%
30475	2%	30%	76%	3%
PREDOMINATE PAYGRADES	E-3/4	E-4/5	E-6	E-3/4
AVERAGE TICF (MOS)	29	80	112	35
AVERAGE TAFMS (MOS)	43	98	159	58
PERCENT IN 1ST ENL	65%	26%	4%	59%
AVERAGE NUMBER OF TASKS PERFORMED	87	252	173	70
AVERAGE NUMBER SUPERVISED	2	3	3	2
PERCENT SUPERVISING	16%	38%	82%	17%

TABLE 3 (CONTINUED)

SELECTED BACKGROUND DATA FOR CAREER LADDER JOBS

	TOSS SPECIALISTS CLUSTER (STG072)	VIDEO TAPE RECORDER TECHNICIANS IJT (STG052)	MANAGEMENT PERSONNEL CLUSTER (STG020)
NUMBER IN GROUP	48	6	52
PERCENT OF SAMPLE	11%	1%	12%
PERCENT IN CONUS	69%	100%	85%
DAFSC DISTRIBUTION (PERCENT):			
30435	10%	50%	0%
30455	75%	33%	21%
30475	15%	17%	79%
PREDOMINATE PAYGRADES	E-4	E-3	E-6
AVERAGE TICF (MOS)	56	20	120
AVERAGE TAFMS (MOS)	74	35	164
PERCENT IN 1ST ENL	38%	83%	0%
AVERAGE NUMBER OF TASKS PERFORMED	113	37	64
AVERAGE NUMBER SUPERVISED	2	3	4
PERCENT SUPERVISING	40%	17%	21%

perform component level repair of TV monitors and receivers
clean VTR tape paths, heads, and pinch rollers
isolate malfunctions in VTR mechanical systems

Comprised mostly of 5-skill level personnel, these incumbents represent a junior group of technicians performing generalized functions in a shop atmosphere within the continental United States (CONUS). Less than 8 percent of the General TV Equipment Repairmen are actually located overseas. Overall, they average 3 1/2 years of total active federal military service (TAFMS) and predominantly hold the rank of E-3 and E-4. A significant characteristic of this group is that 65 percent of these airmen are in their first enlistment, accounting for the largest concentration of first-enlistment personnel in the career ladder.

II. PRODUCTION/BROADCASTING MAINTENANCE TECHNICIANS CLUSTER (STG059, N=155). These 155 airmen form the largest group, representing 35 percent of the total survey sample. This job provides a comprehensive view of the work done at production studios, both CONUS and overseas. The overall mission of these members involves AFRTS production and transmission equipment maintenance. In addition to supporting productions, recordings, playbacks, broadcasts, and receptions, they spend considerable time maintaining auxiliary equipment employed by AVIS personnel. Several pieces of equipment are unique to this job, including portable VTRs, fixed studio microphone systems, video cues, video special effect generators, and studio lighting systems. Of the average 252 tasks performed by these incumbents, typical tasks include:

perform operational checks on camera systems
adjust camera operating controls, such as iris control or set-up
align camera backfocus and tracking
adjust studio phase and timing
control camera video levels during broadcasts or recordings

Comprised mostly of 5-skill level personnel, about 36 percent of the group is located overseas. Overall, they have an average TAFMS of 8 years, and are predominantly in paygrades E-4 and E-5.

III. MAINTENANCE SUPERVISORS IJT (STG082, N=25). This independent job type includes personnel who perform essentially the same technical job as the General TV Repairmen, Production/Broadcasting Maintenance Technicians, and the RAM/Weathervision Technicians. While performing many of the maintenance tasks associated with the career ladder, they also perform a series of tasks unique to the supervisory position. Approximately 82 percent of the members in this job supervise an average of three people. These supervisors perform, on the the average, 173 tasks. Representative tasks include:

direct maintenance or utilization of equipment
maintain training records, charts, or graphs
determine work priorities
conduct on-the-job training (OJT)
perform operational checks on test equipment

Members in this group predominantly hold a 7-skill level, are in paygrade E-6, and average over 13 years of TAFMS.

IV. RAM/WEATHERVISION TECHNICIANS CLUSTER (STG061, N=29). This job includes 29 specialists performing maintenance on CCTV and other related weather forecasting equipment. Members in this job perform tasks in conjunction with base weather personnel. Incumbents in this job have an average TAFMS of slightly under 5 years and are in paygrades E-3 and E-4. Over 59 percent are in their first enlistment and 72 percent hold a 5-skill level. Approximately 86 percent of the RAM/Weathervision Technicians are located on bases in the CONUS. These airmen perform an average of 70 tasks. Typical tasks include:

remove or replace soldered electronic components on etched circuit boards
remove or replace plug-in or screw-in electronic components, such as transistors or indicator lights
remove or replace video cable connections
remove or replace camera pickup tubes
isolate malfunctions in monochrome camera video circuits

V. TELEVISION ORDNANCE SCORING SYSTEM (TOSS) SPECIALISTS CLUSTER (STG072, N=48). This small group of 48 airmen represents a highly specialized segment of the Television Equipment Repair specialty. Members in this group are the only personnel performing maintenance on several pieces of equipment, including microwave receivers and transmitters, solar panels, and graphic system calculators. An average of 113 tasks are performed by these airmen, many which are also unique to this job. Representative tasks include:

perform operational checks on TOSS pan and tilt units
align Television Ordnance Scoring System (TOSS) pan and tilt units
perform operational checks on microwave transmission
isolate malfunctions in TOSS pan and tilt units
perform operational checks on microwave receiving systems

As with the previous group, a majority of these members hold a 5-skill level. Most are in paygrade E-4, and have an average TAFMS of slightly over 6 years. Telephone conversations with TOSS Specialists, as well as RAM/Weathervision Technicians, revealed members of these jobs also operate many of

the pieces of equipment they maintain. For example, interviewed airmen claim to actually score bombing runs or relay weather information over radio channels to area pilots.

VI. VIDEO TAPE RECORDER TECHNICIANS IJT (STG052, N=6). This small independent job type reflects another highly specialized job within the AFSC 304X5 career ladder. Eighty percent of the airmen in this group participate in functions involving the White House Communication Agency (WHCA). Over 50 percent of their time is spent operating or maintaining video tape recorders. Of the average 37 tasks these specialists perform, characteristic tasks include:

bulk erase audio or video tapes
dub video tapes
operate VTR editors
operate VTR
align VTR video circuits, such as playback or record
perform operational checks on video character generators recordings

These specialists have an average TAFMS of slightly less than 4 years and are mostly 3-skill level qualified. A majority of these airmen hold a paygrade of E-3, and 83 percent are in their first enlistment.

VII. MANAGEMENT PERSONNEL CLUSTER (STG020, N=52). Members in this group represent the most senior level of personnel in the survey sample. The majority are in paygrade E-6, and 79 percent are qualified to a 7-skill level. With an average of over 13 1/2 years TAFMS, these incumbents devote approximately 85 percent of their time performing supervisory, managerial, or administrative functions. Variations in this job identified five distinct classifications within the supervisory functions which include: quality assurance, line supervisors, quality control, workload control, and training. Representative tasks of the average 64 tasks performed by this group include:

review OJT records
plan or schedule work assignments
interpret policies, directives, or procedures for subordinates
draft correspondence or reports
evaluate inspection reports or procedures findings

Comparison of Specialty Jobs

Analysis of the AFSC 304X5 career ladder structure indicates that the Television Equipment Repair specialty may be considered somewhat diverse. This is made evident by the fact that both the General Television Equipment Repairmen and the Production/Broadcasting Maintenance Technicians, the two largest

jobs in the AFSC 304X5 career ladder, together account for only 218 members or less than 50 percent of the survey sample. Also, personnel in both the larger and smaller technical jobs perform many unrelated tasks. More than 600 of the 641 tasks surveyed are performed by 50 percent or less of the Television Equipment Repair personnel. This indicates that many tasks are unique to a distinct group of individuals.

In addition to these unique tasks, members in each job perform some functions common throughout the career ladder. Examples of such routine tasks include removing or replacing components, such as transistors or capacitors, and interpreting schematic diagrams. These tasks are performed by approximately 80 percent of the survey sample.

In summary, the career ladder structure indicates that members of the Television Equipment Repair specialty, as a whole, perform specialized functions involving tasks unique to members within each technical job. However, these specialized jobs also encompass many standard tasks, such as performing operational checks on test equipment, that generally are associated with the entire career ladder.

Job Structure Comparison to Previous Survey

The results of the specialty job analysis were compared to those of the last occupational survey report completed in October 1979. A review of the 1979 jobs indicates that the basic structures of the career ladder are somewhat similar. Minor variations noted between the two studies involve distinctions made between the organization of jobs. The current study identifies RAM/Weathervision Technicians and TOSS Specialists as separate and unique jobs, while the 1979 survey includes them as variations within a CCTV Personnel group. Likewise, the 1979 survey identifies Supervisors, Quality Control Inspectors, and Instructors as individual jobs, while the 1988 survey notes them as variations of Management Personnel.

Most of the current jobs are identified in the 1979 survey in this manner. Only one job, Video Tape Recorder Technicians, is identified in 1988, but not in the previous survey. Table 4 lists the major jobs identified in the 1988 survey and their equivalent jobs from the 1979 OSR. Despite the appearance of a structure change, the general functions of the Television Equipment Repair specialty have remained fairly stable.

ANALYSIS OF DAFSC GROUPS

In addition to the analysis of the career ladder structure, an examination of the jobs and tasks performed at each skill level is helpful in understanding the Television Equipment Repair specialty. The DAFSC analysis compares the skill levels to identify differences in task performance. This information may then be used to determine whether personnel are utilized in

TABLE 4

COMPARISON OF MAJOR JOBS BETWEEN SURVEYS

CURRENT SURVEY (N=441)	1979 SURVEY (N=552)
GENERAL TV EQUIPMENT REPAIRMEN	VTR MAINTENANCE PERSONNEL CLOSED CIRCUIT TELEVISION (CCTV) PERSONNEL
MAINTENANCE SUPERVISORS RAM/WEATHERVISION TECHNICIANS TELEVISION ORDNANCE SCORING SYSTEM SPECIALISTS	CLOSED CIRCUIT TELEVISION (CCTV) PERSONNEL
PRODUCTION/BROADCASTING MAINTENANCE TECHNICIANS	TV PRODUCTION EQUIPMENT MAINTENANCE PERSONNEL TV PRODUCTION PERSONNEL
MANAGEMENT PERSONNEL	SUPERVISORS QUALITY CONTROL INSPECTORS INSTRUCTORS
VIDEO TAPE RECORDER TECHNICIAN	NOT IDENTIFIED

the manner specified by the Specialty Description (AFR 39-1) and may serve as a basis for considering changes to current utilization policies and training programs.

Comparison of the duty and task performance between DAFSCs 30435 and 30455 indicates that, even though there are some minor differences, the jobs they perform are essentially the same. Therefore, they will be discussed as a combined group in this report. Examples of tasks distinguishing between these airmen include a larger percentage of 5-skill level personnel performing component level repair on camera systems, removing or replacing integrated circuits, isolating malfunctions to microphones, and determining work priorities. The distribution of skill-level groups across specialty jobs is shown in Table 5, while Table 6 lists the relative time spent on each duty. Further discussion of this data is contained below.

Skill Level Descriptions

DAFSC 30435/55. The 301 airmen in the 3- and 5-skill level group (representing 68 percent of the AFSC 304X5 survey sample) perform an average of 137 tasks, with 91 tasks accounting for approximately 50 percent of their job time. These airmen perform a variety of jobs, in that they are dispersed across most major jobs in the specialty. The exception is that they are not represented significantly in any of the two senior-level groups of Maintenance Supervisors and Management Personnel. Thirty-one percent of their time is employed maintaining camera systems and performing general repair functions. The largest concentration of 3- and 5-skill level personnel is contained within the Production/Broadcasting Maintenance Technicians job (see Table 5).

Examples of tasks likely to be performed by 3- and 5-skill level personnel include: perform operational checks on test equipment, perform component level repair of TV monitors and receivers, and remove or replace video cable connections. A more detailed job description for these journeyman-level airmen is presented in Table 7.

DAFSC 30475. Seven-skill level personnel (32 percent of the AFSC 304X5 survey sample) perform an average of 150 tasks. These airmen supervise an average of four people and spend 55 percent of their time on supervisory and managerial tasks (Duties A through E). While the majority of these 117 7-skill level personnel are members of the two supervisory/managerial jobs, nearly 49 percent of these highly skilled airmen are also present in the more technically oriented jobs (see Table 5). Examples of tasks performed by this group include: determine work priorities, interpret schematic diagrams, and evaluate personnel in compliance with performance standards. A more complete listing of characteristic tasks for these incumbents can be found in Table 8.

Tasks which best distinguish the 7-skill level personnel from their junior counterparts are presented in Table 9. Examples of tasks with the greatest difference in members performing include junior level personnel removing or replacing components and adjusting camera operating controls, such as iris control or set-up. Tasks performed by senior level NCOs include establishing performance standards for subordinates, counseling personnel on

TABLE 5

DISTRIBUTION OF 304X5 DAFSC GROUP MEMBERS
ACROSS CAREER LADDER JOBS
(NUMBER AND PERCENT RESPONDING)

CAREER LADDER JOBS		DAFSC 30435/55 (N=301) NBR	DAFSC 30435/55 (N=301) PCT	DAFSC 30475 (N=140) NBR	DAFSC 30475 (N=140) PCT
I	GENERAL TV EQUIPMENT REPAIRMEN (STG056, N=63)	62	21%	1	*
II	PRODUCTION/BROADCASTING MAINTENANCE TECHNICIANS (STG059, N=155)	108	36%	47	34%
III	MAINTENANCE SUPERVISORS (STG082, N=25)	6	2%	19	14%
IV	RAM/WEATHERVISION TECHNICIANS (STG061, N=29)	28	9%	1	*
V	TELEVISION ORDNANCE SCORING SYSTEM SPECIALISTS (STG072, N=48)	41	14%	7	5%
VI	VIDEO TAPE RECORDER TECHNICIANS (STG052, N=6)	5	2%	1	*
VII	MANAGEMENT PERSONNEL (STG020, N=52)	11	4%	41	29%
	NOT GROUPED (N=63)	40	13%	23	29%
	TOTAL	301	101%	140	100%

* Less than 1 percent
NOTE: Columns may not add up to 100 percent due to rounding

TABLE 6

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY
304X5 DAFSC GROUPS

	DUTIES	DAFSC 30435/55 (N=301)	DASFC 30475 (N=140)
A	ORGANIZING AND PLANNING	2	10
B	DIRECTING AND IMPLEMENTING	2	8
C	INSPECTING AND EVALUATING	2	10
D	TRAINING	3	10
E	WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES AND TECHNICAL DATA	14	17
F	PERFORMING GENERAL REPAIR FUNCTIONS	15	8
G	MAINTAINING CAMERA SYSTEMS	16	8
H	MAINTAINING VIDEO TAPE RECORDER (VTR) SYSTEMS	8	4
I	MAINTAINING TIME BASE CORRECTORS (TBC) SYSTEMS	1	*
J	MAINTAINING COLOR TV MONITORS AND RECEIVERS	7	3
K	MAINTAINING AUDIO SYSTEMS	6	6
L	MAINTAINING STUDIO AND AUXILIARY EQUIPMENT	5	5
M	MAINTAINING FILM CHAINS AND PROJECTORS	*	*
N	MAINTAINING AND OPERATING RADIO AND TV TRANSMITTERS	1	*
O	MAINTAINING AND OPERATING MICROWAVE TRANSMISSION SYSTEMS	4	1
P	MAINTAINING MISCELLANEOUS FACILITIES AND EQUIPMENT	*	*
Q	SUPPORTING PRODUCTIONS, RECORDINGS, PLAYBACKS AND BROADCASTS	5	2
R	INSTALLING AND MODIFYING TELEVISION AND ASSOCIATED EQUIPMENT	6	5

* Less than 1 percent
NOTE: Columns may not add to 100 percent due to rounding

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 30435 AND 30455 PERSONNEL
(N=301)

TASKS		PERCENT MEMBERS PERFORMING
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	89
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	86
F178	INTERPRET SCHEMATIC DIAGRAMS	85
F191	REMOVE OR REPLACE PLUG-IN OR SCREW-IN ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR INDICATOR LIGHTS	85
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	85
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	83
F184	PERFORM CORROSION CONTROL ON TV EQUIPMENT	82
F176	INTERPRET BLOCK DIAGRAMS	79
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	79
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	73
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	70
H280	PERFORM OPERATIONAL CHECKS ON VTR	69
G202	ALIGN CAMERA ELECTRICAL FOCUS	68
E105	COMPLETE PREVENTIVE MAINTENANCE INSPECTION (PMI) LOGS, FORMS, OR CHARTS	66
G258	REMOVE OR REPLACE VIDEO CABLE CONNECTIONS	66
E101	ATTACH EQUIPMENT STATUS TAGS OR LABELS	65
G249	REMOVE OR REPLACE CAMERA LENSES	64
J317	PERFORM OPERATIONAL CHECKS ON RECEIVER/MONITOR OPERATING CONTROLS, SUCH AS BRIGHTNESS OR CONTRAST	62
G209	ALIGN CAMERA VERTICAL OR HORIZONTAL DRIVE CIRCUITS	61
G216	CLEAN CAMERA HEAD LENSES	59
E109	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	52
J313	ISOLATE MALFUNCTIONS IN RECEIVER/MONITOR VIDEO CIRCUITS	52
H279	PERFORM COMPONENT LEVEL REPAIR OF VTR	51

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 30475 PERSONNEL
(N=140)

TASKS		PERCENT MEMBERS PERFORMING
A4	DETERMINE WORK PRIORITIES	74
C70	WRITE APR	68
B24	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	67
B36	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	66
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	62
A10	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	61
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	61
C59	EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS	59
A11	PLAN EQUIPMENT INSTALLATIONS	58
A15	PLAN OR SCHEDULE WORK ASSIGNMENTS	58
D77	CONDUCT OJT	58
D93	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	58
B29	DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT	57
F186	PERFORM QUALITY CONTROL CHECKS ON NEWLY RECEIVED EQUIPMENT	57
D96	REVIEW OJT RECORDS	56
B43	SUPERVISE TELEVISION EQUIPMENT REPAIRMEN (AFSC 30455)	55
D81	COUNSEL TRAINEES ON TRAINING PROGRESS	55
D83	DETERMINE TRAINING REQUIREMENTS	54
E106	DRAFT CORRESPONDENCE OR REPORTS	51
C69	PERFORM TECHNICAL INSPECTIONS OF EQUIPMENT	50
C53	EVALUATE EQUIPMENT MODIFICATIONS	49

TABLE 9

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 30435/55 AND DAFSC 30475 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 30435/55 (N=301)	DAFSC 30475 (N=140)	DIFFERENCE
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	89	61	28
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	86	61	25
F191	REMOVE OR REPLACE PLUG-IN OR SCREW-IN ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR INDICATOR LIGHTS	85	58	27
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	85	59	26
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	83	55	28
F184	PERFORM CORROSION CONTROL ON TV EQUIPMENT	82	46	35
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	76	51	25
E142	MAKE ENTRIES ON AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG)	70	44	26
G250	REMOVE OR REPLACE CAMERA PICKUP TUBES	66	43	23
G249	REMOVE OR REPLACE CAMERA LENSES	64	43	23
E141	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	60	32	28
Q571	OPERATE VTR	50	26	24
A4	DETERMINE WORK PRIORITIES	30	74	44
C70	WRITE APR	27	68	41
B24	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	27	67	40
B36	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	21	66	44
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	18	62	45
A10	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	16	61	45
B26	DEVELOP WORK METHODS OR PROCEDURES	20	60	40
C59	EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS	17	59	42
C57	EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	14	54	41
D83	DETERMINE TRAINING REQUIREMENTS	16	54	38
C71	WRITE AWARDS AND DECORATIONS RECOMMENDATIONS	11	52	42
A20	SCHEDULE TDY, LEAVES OR PASSES	9	51	42
E106	DRAFT CORRESPONDENCE OR REPORTS	12	51	38

personal or military-related problems, and writing APRs. As expected, the key difference lies in a greater emphasis on supervisory functions for 7-skill level airmen.

Summary

Career ladder progression within the AFSC 304X5 career ladder is typical of most ladders. Both 3- and 5-skill level personnel spend the majority of their job time performing technical tasks. Individuals possessing a 7-skill level concentrate their efforts on supervisory and managerial functions, with a substantial decrease in time spent performing tasks technical in nature.

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

The results of the skill level and job structure analysis were compared with the AFR 39-1 Specialty Descriptions, dated 1 February 1988, for the Television Equipment Repair specialty. The descriptions in AFR 39-1 describe in broad terms the tasks and duties performed by members of the various skill-level groups of a career ladder.

These broad descriptions for AFSC 304X5 personnel are well supported by the findings of this survey. The descriptions depict the technical aspects of the job, while incorporating the increasing supervisory responsibilities previously described in the DAFSC analysis. Though all major jobs are described within AFR 39-1, the regulation does not reflect the operating functions practiced by members of the career ladder. As described in the SPECIALTY JOB section, a major responsibility of VTR Technicians, TOSS Specialists, and RAM/Weathervision Technicians involves operating many of the pieces of equipment they maintain. Both data collected from the job inventories and conversations held with AFSC 304X5 Specialty experts identified "operate" as a key task. Functional managers should consider inclusion of operating functions in the next revision of AFR 39-1.

Decisions affecting future revisions of AFR 39-1 should also be influenced by the new organization structure projected to occur in the Fall of 1988. Communications with Television Equipment Repair experts disclosed information concerning changes currently occurring in the career ladder. Major force reorganization is impacting the future existence of two primary jobs. As of October 1988, RAM/Weathervision functions will be completely terminated. Also during this time frame, TOSS functions are scheduled to be phased down to two bases and later to be totally eliminated. Classification personnel should revise the descriptions to accurately reflect this new organizational structure and their corresponding duties.

TRAINING ANALYSIS

Occupational survey data provide one of several sources of information which can be used to make training programs more relevant and meaningful to students. The three most commonly used types of occupational survey information are: (1) the percent of first-enlistment personnel performing tasks covered in the job inventory, (2) ratings of relative difficulty of tasks, and (3) the ratings of relative emphasis which should be placed on tasks for first-enlistment training. These data can be used in evaluating training documents such as the Specialty Training Standard (STS) and the Plan of Instruction (POI).

To aid in the evaluation of the AFSC 304X5 specialty training documents, personnel at the 3420th Technical Training Group for Television Equipment Repair matched nonmanagerial job inventory tasks to appropriate sections of the STS, POI, and Course Training Standard (CTS). With these matchings, comparisons of survey data to the training documents were accomplished. A complete computer listing displaying percent members performing tasks, TE and TD ratings for each task, along with STS, POI, and CTS matchings, has been forwarded to the technical school for its use in further detailed reviews of training documents.

Training Emphasis and Task Difficulty

Training Emphasis (TE) and Task Difficulty (TD) ratings are factors that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. TE ratings provided by career ladder subject-matter experts yielded an average rating of 2.70, with a standard deviation of 1.59. Therefore, tasks having a rating of 4.29 (average TE + 1 standard deviation) or better are considered highly recommended for structured training. TD ratings were adjusted to an average of 5.00 and a standard deviation of 1.00. Tasks with ratings of 3.00 or better are perceived as difficult enough to warrant centralized training. For a complete discussion of TE and TD, please refer back to the TASK FACTOR ADMINISTRATION section of this report.

Tasks having the highest TE ratings are listed in Table 10. Included for each task are the percentage of first-job and first-enlistment personnel performing and the TD rating. As illustrated in Table 10, these tasks pertain to a variety of technical functions within the specialty. A majority of these tasks fall into the Performing General Repair Functions category, with others relating to Maintaining Color TV Monitors and Receivers, Camera Systems, and VTR Systems. In addition, these tasks are performed by substantial percentages of first-enlistment personnel, and have average to high TD ratings.

Table 11 lists the tasks having the highest TD ratings. The percentage of first-enlistment, 5-, and 7-skill level personnel performing, and the TE rating are also included for each task. Most of these tasks relate to maintaining Time Base Corrector (TBC) systems, as well as studio and auxiliary equipment. These tasks are not performed by many airmen and have low TE ratings.

TABLE 10

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE) FOR 304X5 PERSONNEL
(GREATER THAN 1 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS		TNG EMPH*	PERCENT MEMBERS PERFORMING 1ST JOB (N=53)	PERCENT MEMBERS PERFORMING 1ST ENL (N=143)	TASK DIFF**
F178	INTERPRET SCHEMATIC DIAGRAMS	6.97	91	87	5.85
F176	INTERPRET BLOCK DIAGRAMS	6.92	81	82	4.88
F189	REMOVE OR REPLACE INTEGRATED CIRCUITS	6.85	64	75	5.75
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	6.72	92	92	5.02
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	6.62	83	83	5.28
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	6.46	60	72	4.60
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	6.44	81	81	4.94
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	6.31	85	85	4.53
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	6.28	83	85	4.99
F180	ISOLATE MALFUNCTIONS TO POWER SUPPLIES	6.23	70	74	5.17
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	6.13	66	73	4.25
J316	PERFORM CRT SETUPS, SUCH AS COLOR TEMPERATURE OR CONVERGENCE	6.05	49	50	5.57
G246	PERFORM COLOR CAMERA REGISTRATION	5.97	30	38	5.91
H266	ALIGN VTR SERVO CIRCUITS	5.97	38	39	6.73
F179	ISOLATE MALFUNCTIONS TO CABLE ASSEMBLIES	5.90	64	71	5.13
J309	ISOLATE MALFUNCTIONS IN HIGH VOLTAGE CIRCUITS	5.90	47	49	6.03
J315	PERFORM COMPONENT LEVEL REPAIR OF TV MONITORS AND RECEIVERS	5.87	53	55	5.81
J317	PERFORM OPERATIONAL CHECKS ON RECEIVER/MONITOR OPERATING CONTROLS, SUCH AS BRIGHTNESS OR CONTRAST	5.87	60	62	3.61
J313	ISOLATE MALFUNCTIONS IN RECEIVER/MONITOR VIDEO CIRCUITS	5.82	49	50	5.61
H264	ALIGN VTR MECHANICAL SYSTEMS	5.80	42	41	6.71

* Average Training Emphasis = 2.70 with SD of 1.59 (High = 4.29)
** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 11

TASKS RATED HIGHEST IN TASK DIFFICULTY (TD) FOR 304X5 PERSONNEL
(GREATER THAN 1 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS		TASK DIFF*	PERCENT MEMBERS PERFORMING 1ST ENL (N=143)	30455 (N=249)	30475 (N=140)	TNG EMP**
I287	ALIGN TIME BASE CORRECTORS (TBC)	7.46	16	24	23	3.77
I290	ISOLATE MALFUNCTIONS IN FRAME SYNCHRONIZER TIMING CIRCUITS	7.27	8	12	13	2.67
L408	ALIGN VIDEO SWITCHERS	7.26	15	30	35	4.74
I284	ALIGN FRAME SYNCHRONIZER TIMING CIRCUITS	7.23	7	12	14	3.28
I285	ALIGN FRAME SYNCHRONIZER VIDEO PROCESSING CIRCUITS	7.22	8	14	13	3.05
L424	ISOLATE MALFUNCTIONS IN VIDEO SWITCHERS	7.14	18	31	37	5.03
I293	PERFORM COMPONENT LEVEL REPAIR OF TBC	7.03	10	17	20	3.31
R620	REMOVE OR REPLACE RADIO AND TV TRANSMITTERS	7.03	3	7	10	1.18
R603	PREPARE DESIGN MODIFICATION RECOMMENDATIONS FOR REVIEW BY HIGHER HEADQUARTERS	7.02	1	4	12	.85
A11	PLAN EQUIPMENT INSTALLATIONS	7.01	15	25	58	1.67
A7	DRAFT BUDGET REQUIREMENTS	6.99	2	4	27	.41
J301	ALIGN RECEIVER INTERMEDIATE FREQUENCY (IF) STRIPS	6.98	19	24	13	3.95
R638	SET UP MOBILE PRODUCTION FACILITIES	6.96	10	15	16	2.41
L406	ALIGN VIDEO SPECIAL EFFECTS GENERATORS	6.95	8	16	16	3.05
C71	WRITE AWARDS AND DECORATIONS RECOMMENDATIONS	6.93	1	13	52	.79
I291	ISOLATE MALFUNCTIONS IN FRAME SYNCHRONIZER VIDEO CIRCUITS	6.92	9	13	13	2.79
L423	ISOLATE MALFUNCTIONS IN VIDEO SPECIAL EFFECTS GENERATORS	6.86	8	14	18	2.85
J302	ALIGN RECEIVER RADIO FREQUENCY (RF) CIRCUITS	6.85	20	26	14	4.03
A13	PLAN LAYOUT OF FACILITIES	6.78	6	9	41	.64
0510	ALIGN MICROWAVE TRANSMITTERS	6.74	14	14	7	2.15

* Average Task Difficulty = 5.00 with SD of 1.00
** Average Training Emphasis = 2.70 with SD of 1.59 (High = 4.29)

While reviewing this section of the report, note that tasks performed by moderate to high percentages of personnel (30 percent or better) in the first-enlistment group may justify resident technical training. TE and TD ratings, composed of the opinions of experienced career ladder personnel, are secondary factors that may assist training developers in deciding which tasks should be emphasized for entry-level training. Those tasks receiving high task factor ratings, but performed by low percentages of first-enlistment personnel, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best left out of training for new personnel. Training decisions are not only weighed against these factors, but should be influenced by many other considerations including command concerns, safety standards, and criticality of the tasks.

Analysis of First-Enlistment Personnel

In this study, there are 143 airmen in their first enlistment, representing 32 percent of all AFSC 304X5 personnel. These airmen are qualified at either the 3- or 5-skill level. Figure 2 reflects the distribution of these first-enlistment airmen across career ladder jobs. As shown in Figure 2, most of these first-enlistment members are located in two major jobs, General Television Repairmen and Production/Broadcasting Maintenance Technicians, each accounting for 29 percent of all 1-48 months TAFMS respondents. Other job groups with moderate percentages of first-enlistment personnel include the Television Ordnance Scoring System Specialists (13 percent) and the RAM/ Weathervision Technicians (12 percent).

First-enlistment personnel perform an average of 114 tasks. Table 12 presents a list of representative tasks performed by these first-termers. Most of the tasks pertain to general repair functions and maintaining camera systems. The highly technical nature of these junior airmen's job is revealed by the fact that only 4 percent of their job time involves supervisory or managerial functions, such as those in duties A, B, C, or D.

Further indication of the technical orientation of these airmen is the variety and number of equipment and test equipment worked on or utilized by first-enlistment personnel. While most of the equipment is also worked on by substantial percentages of other experience level groups, some items are principally maintained by members having the higher experience levels. These include Fuji lenses, audio cart recorders, broadcast color camera chains and audio limiters. Table 13 lists equipment items worked on by 30 percent or more first-enlistment, 5-, or 7-skill level personnel. Similarly, test equipment used or operated by these airmen are listed in Table 14. Examples of test equipment utilized by AFSC 304X5 personnel include meters, oscilloscopes, generators, testers, counters, and gauges. A full computer listing of all equipment items and the associated percent members performing is supplied in the Training Extracts and should be used by training specialists to determine which types of equipment should be emphasized for first-term training.

DISTRIBUTION OF 304X5 FIRST-ENLISTMENT PERSONNEL ACROSS SPECIALTY JOBS

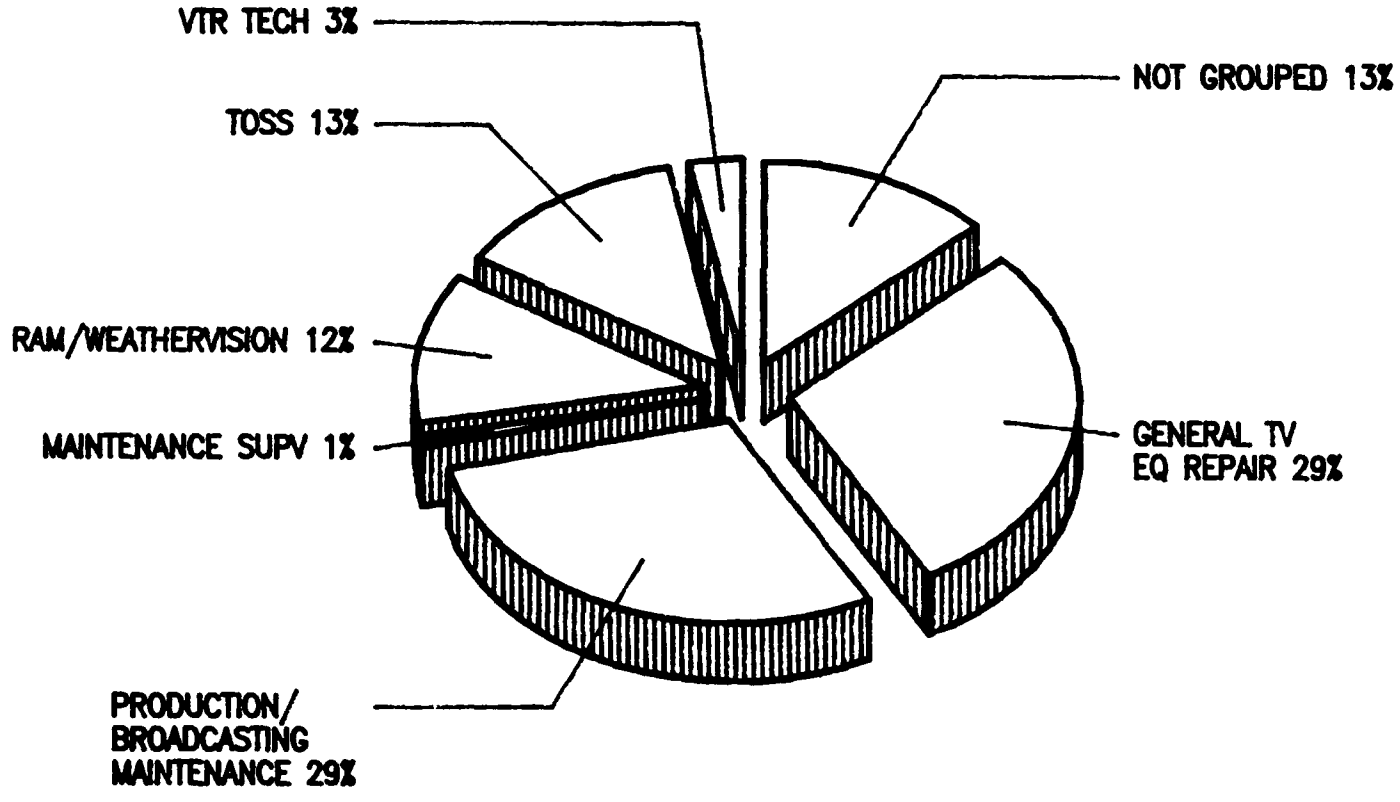

FIGURE 2

TABLE 12

REPRESENTATIVE TASKS PERFORMED BY AFSC 304X5
FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS		PERCENT MEMBERS PERFORMING (N=143)
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	92
F178	INTERPRET SCHEMATIC DIAGRAMS	87
F191	REMOVE OR REPLACE PLUG-IN OR SCREW-IN ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR INDICATOR LIGHTS	86
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	85
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	85
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	83
F176	INTERPRET BLOCK DIAGRAMS	82
F184	PERFORM CORROSION CONTROL ON TV EQUIPMENT	82
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	81
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	76
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	73
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	72
H280	PERFORM OPERATIONAL CHECKS ON VTR	72
E120	MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	69
G194	ADJUST BLACK BALANCES	64
G250	REMOVE OR REPLACE CAMERA PICKUP TUBES	63
G249	REMOVE OR REPLACE CAMERA LENSES	62
J317	PERFORM OPERATIONAL CHECKS ON RECEIVER/MONITOR OPERATING CONTROLS, SUCH AS BRIGHTNESS OR CONTRAST	62
R580	CONSTRUCT CABLE ASSEMBLIES	62
E105	COMPLETE PREVENTIVE MAINTENANCE INSPECTION (PMI) LOGS, FORMS, OR CHARTS	61
G258	REMOVE OR REPLACE VIDEO CABLE CONNECTIONS	61
Q571	OPERATE VTR	57
J315	PERFORM COMPONENT LEVEL REPAIR OF TV MONITORS AND RECEIVERS	55
H279	PERFORM COMPONENT LEVEL REPAIR OF VTR	50
J307	DEGAUSS RECEIVER/MONITOR CATHODE RAY TUBES (CRT)	50

TABLE 13

EQUIPMENT WORKED ON
BY GREATER THAN 30 PERCENT OF AFSC 304X5 PERSONNEL

EQUIPMENT	PERCENT MEMBERS PERFORMING		
	1ST ENL (N=143)	DAFSC 30455 (N=249)	DAFSC 30475 (N=140)
Amplifiers, Audio	57	65	57
Amplifiers, Audio AGS	13	26	30
Amplifiers, Processing	27	34	42
Amplifiers, Video Distributers	87	89	69
Amplifiers, Video Processing	45	47	46
Amplifiers, Video Stabilizing	27	31	28
Audio Cart Recorders	20	32	36
Audio Distribution Systems	48	51	55
Audio Equalizers	25	27	34
Audio Limiters	20	27	34
Audio Mixers Consoles	44	50	52
Audio Monitors	33	38	44
Audio Preamplifiers	31	41	46
Audio Speaker Systems	29	44	47
Automatic Video Correctors	22	28	34
Battery Chargers	35	44	50
Broadcast Color Camera Chains	18	28	37
Bulkerasers	25	38	49
Camera Systems, Color	41	50	50
Camera Systems, Monochrome	58	56	34
Cameras, ENG/EFP Color	29	42	49
Cameras, 3 Tube Color	36	46	51
Closed Circuit TV Systems	55	50	27
Closed Helical VTR, Broadcast, 3/4 inch	50	56	51
Closed Helical VTR, Broadcast, 1/2 inch	30	27	34
Closed Helical VTR, Educational, 3/4 inch	43	36	28
Component Video Devices (Betacam)	19	20	31
Digital Video Time Base Correctors/Frame Syn	31	37	46
Electronic Video Switchers with Mix Facilities	36	43	51
ENG/EFP Portable Video Tape Recorders	37	45	52
Film Chains	22	29	31
Fixed Studio Microphone Systems	24	33	36
Frame Synchronizers	12	20	31
Generators, Character	43	49	54
Generators, Color Sync	38	41	48
Generators, Sync	54	55	53
Generators, Video Background	29	31	33
Generators, Video Black Burst	41	43	46
Generators, Video Chroma Key	31	35	36
Generators, Video Insert Key	23	28	31
Generators, Video Special Effects	24	30	32

TABLE 13 (CONTINUED)

EQUIPMENT WORKED ON
BY GREATER THAN 30 PERCENT OF AFSC 304X5 PERSONNEL

EQUIPMENT	PERCENT MEMBERS PERFORMING		
	1ST ENL (N=143)	DAFSC 30455 (N=249)	DAFSC 30475 (N=140)
Intercom Systems	29	34	41
Lenses, Fuji	21	35	41
Lighting Systems, ENG	24	33	39
Lighting Systems, Studio	31	38	38
Monitors, Color	63	62	63
Passive Video Switchers Without Mix Facilities	10	27	31
Power Supplies	79	83	66
Pulse Distribution Systems	35	42	51
Receivers, Color	51	54	60
Recorders/Reproducers, Audio Cartridge	16	30	34
Recorders/Reproducers, Audio Cassette	30	39	43
Recorders/Reproducers, Audio Tape	29	38	46
Routing Switchers	35	35	44
Slide Projectors	22	25	30
Teleprompters	31	35	37
Time Base Correctors	41	47	54
Tripods/Pedestals	35	47	51
Turntables	38	43	44
Video Cable Transmission Systems	29	31	22
Video Tape Analyzers/Erasers/Cleaners	27	35	41
VTR Editing Systems	44	47	54
Wireless Microphone Systems	24	28	30

TABLE 14

TEST EQUIPMENT USED OR OPERATED
BY GREATER THAN 30 PERCENT OF AFSC 304X5 PERSONNEL

TEST EQUIPMENT	PERCENT MEMBERS PERFORMING		
	1ST ENL (N=143)	DAFSC 30455 (N=249)	DAFSC 30475 (N=140)
Analyzers, Audio Distortion	15	22	31
Analyzers, Spectrum	23	29	31
Analyzers, TV	36	39	34
Audio Oscillators	49	55	59
Audio Test Tapes/Recorders	33	43	44
Camera, Alignment Charts	79	84	67
Capacitance/Induction Meters	41	43	34
Checkers, Capacitor	71	71	57
Checkers, CRT	69	70	55
DB Attenuators	35	45	36
Degaussers	69	69	61
Desoldering Units	74	77	66
Digital Frequency Counters	74	78	69
Digital Logic Clips	15	27	30
Digital Logic Probes	27	33	36
Digital Voltmeters	90	87	77
Gauges, Eccentricity	45	53	54
Gauges, Spring	31	42	48
Generators, Audio Signals	45	52	53
Generators, Color Bar	73	71	63
Generators, Dot	87	87	64
Generators, Grating	74	78	64
Generators, Multiburst	69	68	65
Generators, RF Signal	46	46	31
Generators, Sweep Marker	29	38	36
Generators, Video Signal	64	67	59
High Voltage Probes	88	88	68
Linearity Checkers	24	29	31
Meters, DB	30	41	42
Meters, Frequency	28	35	33
Meters, VU	37	50	53
Monitors, Waveform	80	79	69
Multimeters	98	94	79
Oscilloscopes	98	94	79
Tentelometers, Tape Tension	25	36	43
Testers, Transistor/FET	69	67	62
Testers, Vaccum Tube	44	45	26
TV Demodulators	17	23	30
Vaccum Tube Voltmeters	40	33	16
Variable Power Supplies	53	59	52
Vectorscopes	57	55	59
Video Test Tapes	59	63	59
Wattmeters	22	33	21

Review of Specialty Training Standard

A comprehensive review of STS 304X5, Television Equipment specialty, dated September 1983, was made by comparing STS elements to survey data. STS elements with performance objectives are reviewed in terms of training emphasis, task difficulty, and percent members performing information as stipulated in ATCR 52-22, dated 8 December 1986. STS elements containing general career ladder knowledge and information are not reviewed. Typically, tasks performed by 20 percent or more of personnel in appropriate experience or skill level groups, such as first-enlistment (1-48 months TAFMS), and 5- and 7-skill level groups, should be considered for inclusion in the STS. Likewise, tasks with less than 20 percent performing in any of these groups should be considered for deletion from the STS.

Most performance items in the STS are supported by survey data. Overall, only 6 elements (out of 44 matched elements) are not supported, in that they have matched tasks performed by less than 20 percent of first-enlistment, 5-, or 7-skill level respondents. These unsupported STS elements relate to two paragraphs, 11g (TOSS) and 11h (RF Transmitters), and are displayed in Table 15. AFR 8-13 states that an STS identifies "the most common tasks of an enlisted Air Force Specialty that require training". It is intended to cover all major job areas being performed within the career ladder. Training personnel should consider the small but unique mission of TOSS Specialists in reference to this regulation when reviewing the unsupported elements for possible deletion from the STS.

Further analysis of the STS found 209 tasks not referenced to the STS, with half pertaining to technical functions. These tasks are reviewed to determine if they focus around a common function or equipment item. Following the organizational structure of the AFSC 304X5 STS, several tasks appear related to specific systems or subsystems and their performance elements. For example, seven tasks (G249, G251, G253, G254, G255, G258, G259) refer to removing or replacing camera components. Similarly, three tasks (K387, K388, K389) refer to removing or replacing recorder/player subassemblies. Examples of technically-oriented tasks performed by greater than 20 percent of AFSC 304X5 airmen and are not referenced to the STS are listed in Table 16. Training personnel should carefully review the list of "Tasks Not Referenced," located at the end of the STS computer printout in the TRAINING EXTRACT, to determine areas which might be appropriate for inclusion in future revisions of the STS.

Finally, review of the contents of the STS identified elements written too broadly to clearly highlight specific areas of the career ladder. Examples include paragraphs 4 and 9d(2). Though paragraph 4 is titled Supervision, various other unrelated activities comprise the Supervision elements, including preparing forms, and inventorying equipment, tools, and supplies. Likewise, paragraph 9d(2) is subheaded isolation as a General Repair Function. However, 27 tasks were matched to this single element ranging from isolating cameras pedestal and color camera control unit circuits to isolating iris drive systems and motorized lens subassemblies. Training personnel should evaluate the STS for inclusion of separate paragraphs and/or elements for these and other overly broad areas.

TABLE 15

AFSC 304X5 STS ELEMENTS NOT SUPPORTED BY OSR DATA
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ELEMENT/REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING 1ST ENL (N=143)	DAFSC 30455 (N=249)	DAFSC 30475 (N=140)	TASK DIFF*
11g TELEVISION ORDNANCE SCORING SYSTEM				
11g(2) PERFORM OPERATIONAL CHECK 1a 3c 3c				
0522 PERFORM OPERATIONAL CHECKS ON ANTENNAS	13	16	9	4.09
0524 PERFORM OPERATIONAL CHECKS ON MICROWAVE TRANSMISSION SYSTEMS	13	16	9	4.34
0526 PERFORM VOLTAGE CHECKS ON SOLAR PANELS	15	16	6	3.69
11g(3) ALIGN 1a 3c 3c				
0507 ALIGN MICROWAVE ANTENNAS	14	16	7	5.80
0510 ALIGN MICROWAVE TRANSMITTERS	14	14	7	6.74
0512 ALIGN TOSS PAN AND TILT UNITS	13	15	6	5.24
11g(4) TROUBLESHOOT 1a 3c 3c				
0516 ISOLATE MALFUNCTIONS IN MICROWAVE TRANSMITTER OR RECEIVER CIRCUITS	12	15	6	5.63
0517 ISOLATE MALFUNCTIONS IN TOSS PAN AND TILT UNITS	13	14	6	4.74
0519 ISOLATE MALFUNCTIONS TO WAVEGUIDES OR COAXIAL CABLES	10	14	5	5.48
11h RF TRANSMITTER				
11h(3) ALIGN 1a 2b --				
N480 ALIGN TRANSMITTER AND ANTENNA COUPLINGS	2	8	6	6.36
N483 ALIGN TRANSMITTER POWER AMPLIFIERS	2	12	7	6.37
N484 ALIGN TRANSMITTER REMOTE CONTROL SYSTEMS	2	5	4	5.90
11h(4) TROUBLESHOOT 1a 2b 3c				
N487 ISOLATE MALFUNCTIONS IN REMOTE CONTROL SYSTEMS	3	6	3	5.77
N490 ISOLATE MALFUNCTIONS TO ANTENNA SYSTEMS	4	10	6	5.70
N492 ISOLATE MALFUNCTIONS TO TRANSMITTER SUBASSEMBLIES	3	8	5	5.97
11h(5) REPAIR a 2b 3c				
N493 PERFORM COMPONENT LEVEL REPAIR OF RADIO AND TV TRANSMITTERS	5	12	9	6.52

* Average Task Difficulty = 5.00 with SD of 1.00

TABLE 16

EXAMPLES OF TASKS PERFORMED BY 20 PERCENT OR MORE
AFSC 304X5 GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS		PERCENT MEMBERS PERFORMING				
		1ST ENL (N=143)	DAFSC 30455 (N=249)	DAFSC 30475 (N=140)	TNG EMP*	TASK DIFF**
F173	ALIGN USER-CALIBRATED TEST EQUIPMENT	34	41	36	4.18	5.99
F176	INTERPRET BLOCK DIAGRAMS	82	80	69	6.92	4.88
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	81	80	66	6.44	4.94
F180	ISOLATE MALFUNCTIONS TO POWER SUPPLIES	74	76	58	6.23	5.17
G216	CLEAN CAMERA HEAD LENSES	57	63	40	4.26	3.75
G249	REMOVE OR REPLACE CAMERA LENSES	62	68	41	4.26	3.90
G258	REMOVE OR REPLACE VIDEO CABLE CONNECTIONS	61	69	44	4.74	3.64
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	73	70	48	6.13	4.25
I289	CLEAN TBC	33	41	33	3.05	3.48
J319	REMOVE OR REPLACE RECEIVER/MONITOR SUBASSEMBLIES	36	44	29	4.67	4.69
K344	CLEAN OR LUBRICATE REEL-TO-REEL MACHINES	31	37	26	3.33	3.69
L443	REMOVE OR REPLACE VIDEO DISTRIBUTION AMPLIFIERS	24	35	37	3.74	4.01
Q559	OPERATE CAMERAS	34	41	23	3.90	4.28
Q571	OPERATE VTR	57	50	26	4.05	3.99
R580	CONSTRUCT CABLE ASSEMBLIES	62	64	44	4.67	4.71
R631	REMOVE OR REPLACE VIDEO DISTRIBUTION SYSTEMS	29	37	33	3.15	5.24
R637	REMOVE OR REPLACE VTR SYSTEMS	37	37	35	3.21	5.28

* Average Training Emphasis = 2.70 with SD of 1.59 (high = 4.29)
** Average Task Difficulty = 5.00 with SD of 1.00

In summary, the AFSC 304X5 STS needs review. Elements not supported by matched tasks should be assessed for possible elimination, the list of tasks not referenced should be carefully screened for additional areas which should be included or expanded, and broad paragraphs and elements should be restructured.

Review of Plan of Instruction (POI)

Based on assistance from technical school subject-matter experts in matching job inventory tasks to Tentative POI G3ABR30435-002, dated February 1988, occupational survey data were matched to related training objectives. A similar method to that of the STS analysis was employed to review the POI. The specific data examined included percent members performing data for First-Enlistment (1-48 months TAFMS) personnel, TE, and TD ratings.

Guidelines outlined in ATCR 52-22 state that a POI objective is supported for training if 30 percent or more of all first-enlistment personnel perform related tasks. Analysis of the survey data indicates that of the 24 performance level POI objectives matched to task items, all are supported. This equates to 290 out of 488 total course hours.

Seventy tasks performed by 30 percent or more first-enlistment personnel are not matched with POI objectives. Tasks relating to general repair functions, camera and VTR systems account for the majority of unreferenced tasks. In addition to high levels of performance, several of these tasks are rated high in terms of training emphasis and task difficulty. Examples of these tasks with survey data are listed in Table 17. Training personnel are encouraged to review the computer printouts of the POI. Particular emphasis should be placed on reviewing the tasks not refenced located in the Training Extracts to determine if new areas should be added to the basic course.

Review of G3AZR30455-002 Course Training Standard (CTS)

As requested by the technical school personnel, the tentative CTS for Course G3AZR30455-002, Broadcast Television Systems Maintenance, dated June 1986, was also examined. The CTS is designed to expand on STS objectives, as well as provide detailed training on advanced equipment. This course includes instruction on camera and VTR systems, TBC systems, electronic news gathering color camera systems, studio systems, television transmitters, and microwave/satellites. Based on assistance from specialists at Lowry AFB, the CTS was matched to survey task statements. A similar method to that of the STS and POI analysis was employed in the review of the CTS. The specific data examined includes task difficulty and percent of 5-skill level members performing.

Of the 42 performance level CTS objectives, six are not supported due to fewer than 20 percent of the appropriate personnel performing the matched tasks. As Table 18 depicts, these objectives are not concentrated around any common area, but are dispersed throughout the course. Training personnel should evaluate these six objectives in terms of training efficiency and/or necessity.

TABLE 17

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING AND NOT REFERENCED TO POI 30435-002

TASKS		1-48 MONTHS TAFMS (N=143)	TNG EMP*	TASK DIFF**
F184	PERFORM CORROSION CONTROL ON TV EQUIPMENT	82	5.28	4.00
F187	RECONSTRUCT TRACES ON ETCHED BOARDS	52	5.28	5.83
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	92	6.72	5.02
F189	REMOVE OR REPLACE INTEGRATED CIRCUITS	75	6.85	5.75
F191	REMOVE OR REPLACE PLUG-IN OR SCREW-IN ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR INDICATOR LIGHTS	86	5.77	3.91
G205	ALIGN CAMERA PICKUP TUBE DEFLECTION CIRCUITS	50	5.51	6.25
G216	CLEAN CAMERA HEAD LENSES	57	4.26	3.75
G221	ISOLATE MALFUNCTIONS IN CAMERA HORIZONTAL OR VERTICAL DRIVE CIRCUITS	44	4.90	6.07
G250	REMOVE OR REPLACE CAMERA PICKUP TUBES	63	5.67	6.07
H262	ALIGN VIDEO TAPE RECORDER (VTR) AUDIO CIRCUITS	31	5.28	5.73
H279	PERFORM COMPONENT LEVEL REPAIR OF VTR	50	5.33	6.28
J299	ALIGN HIGH VOLTAGE CIRCUITS	43	5.62	5.30
J304	ALIGN RECEIVER/MONITOR DEFLECTION CIRCUITS	48	5.38	5.80
J318	REMOVE OR REPLACE CRT	35	5.23	5.33
K344	CLEAN OR LUBRICATE REEL-TO-REEL MACHINES	31	3.33	3.69
K376	PERFORM OPERATIONAL CHECKS ON AUDIO SPEAKER SYSTEMS	35	3.82	3.98
R580	CONSTRUCT CABLE ASSEMBLIES	62	4.67	4.71
R637	REMOVE OR REPLACE VTR SYSTEMS	37	3.21	5.28

* Average Training Emphasis = 2.70 with SD of 1.59 (high = 4.29)
** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 18

AFSC 30455 CTS ELEMENTS NOT SUPPORTED BY OSR DATA
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

CTS ELEMENT/TASKS		PERCENT MEMBERS PERFORMING DAFSC 30455 (N=249)	TASK DIFF*
1d	UTILIZE TEST EQUIPMENT		
(5)	TELEVISION TEST SIGNALS 3c		
N498	PERFORM OPERATIONAL CHECKS ON TRANSMITTERS	19	4.81
N499	PERFORM TRANSMITTER PROOF-OF-PERFORMANCE CHECKS	8	6.06
7f	AM TRANSMITTER		
(3)	MONITOR 3c		
N495	PERFORM FIELD STRENGTH MEASUREMENTS	9	5.13
N499	PERFORM TRANSMITTER PROOF-OF-PERFORMANCE CHECKS	8	6.06
7g	FM STEREO TRANSMITTER		
(3)	MONITOR 3c		
N495	PERFORM FIELD STRENGTH MEASUREMENTS	9	5.13
N499	PERFORM TRANSMITTER PROOF-OF-PERFORMANCE CHECKS	8	6.06
8	TELEVISION TRANSMITTER		
8e	MONITOR 3c		
N495	PERFORM FIELD STRENGHT MEASUREMENTS	9	5.13
N499	PERFORM TRANSMITTER PROOF-OF-PERFORMANCE CHECKS	8	6.06
9a	FIXED MICROWAVE		
(3)	TROUBLESHOOT 3c		
0516	ISOLATE MALFUNCTIONS IN MICROWAVE TRANSMITTER OR RECEIVER CIRCUITS	15	5.63
0518	ISOLATE MALFUNCTIONS TO MICROWAVE TRANSMITTER OR RECEIVER SUBASSEMBLIES	12	5.62
0519	ISOLATE MALFUNCTIONS TO WAVEGUIDES OR COAXIAL CABLES	14	5.48
9b	MOBIL MICROWAVE		
(2)	SET UP 3c		
L447	SET UP MOBILE SYSTEM AC GENERATORS	8	4.84
R639	SET UP REMOTE BROADCASTING OPERATIONS	14	6.63

* Average Task Difficulty = 5.00 with SD of 1.00

The CTS does not reference 216 tasks that are performed by 20 percent or more 5-skill level personnel. Greater than 80 percent of these tasks are technically oriented and span 9 of the 13 duties. Several of these tasks are also rated high in terms of task difficulty. Examples of tasks, with an emphasis on production and broadcasting related duties, are listed in Table 19. A complete detailed listing is located in the Training Extracts.

Additionally, the CTS does not reference several test equipment items used or operated by 30 percent or more 5-skill level respondents (see Table 14). Examples of test equipment used by experienced personnel include Sweep Marker Generators, Tape Tension Tentelometers, and Wattmeters. The list of tasks not referenced, as well as test equipment used or operated should be carefully screened for inclusion or expansion into the CTS.

JOB SATISFACTION ANALYSIS

Comparisons of group perceptions of their jobs provide career ladder managers with a means toward understanding some of the factors affecting job performance of today's airmen. These perceptions are gathered from incumbents' responses to five job satisfaction questions covering job interest, perceived utilization of talents, perceived utilization of training, sense of accomplishments, and reenlistment intentions. The responses of the current survey sample are then analyzed by making several comparisons: (1) among TAFMS groups of a comparative sample of personnel from other Mission Equipment Maintenance specialists surveyed in 1987 (AFSCs 303X1, 303X3, 304X5, 321X1, 427X0, 427X2, 427X3), (2) between current and previous survey TAFMS groups, and (3) across specialty job groups identified in the SPECIALTY JOBS section of this report.

First-enlistment (1-48 months TAFMS), second-enlistment (49-96 months TAFMS), and career (97+ months TAFMS) group data are listed in Table 20 and are compared to corresponding enlistment groups from other Mission Equipment Maintenance AFSCs surveyed during the previous calendar year. These data give a relative measure of how the job satisfaction of AFSC 304X5 personnel compares with that of other similar Air Force specialties. Generally, enlistment groups of the DAFSC 304X5 sample indicate similar or lower levels of job satisfaction than do those of the comparative sample. This is demonstrated particularly in the areas of utilization of training by first- and second-enlistment personnel. Television Equipment Repair first-termers also indicated less satisfaction concerning a sense of accomplishment.

An indication of changes in job satisfaction perceptions within the career ladder is provided in Table 21, where TAFMS group data for 1988 survey respondents is presented along with data from respondents to the last occupational survey report of the career ladder. Generally, perceptions associated with job interests and utilization of training have improved since the 1979 OSR. Second-enlistment personnel from the 1988 sample exceeds training satisfaction figures from the 1979 sample by 20 percent. The most noticeable differences are in reenlistment intentions across all TAFMS groups. Plans to

TABLE 19

EXAMPLES OF TASKS PERFORMED BY 20 PERCENT OR MORE
AFSC 304X5 GROUP MEMBERS AND NOT REFERENCED TO THE CTS

TASKS		PERCENT MEMBERS PERFORMING DAFSC 30455 (N=249)	TNG EMP*	TASK DIFF**
H267	ALIGN VTR SYSTEM CONTROL FUNCTIONS, SUCH AS FAST FORWARD OR REWIND	45	5.28	6.15
J303	ALIGN RECEIVER/MONITOR CHROMA CIRCUITS	50	5.36	6.05
K361	ISOLATE MALFUNCTIONS TO AUDIO DISTRIBUTION SYSTEMS	31	4.28	4.90
K366	ISOLATE NOISE IN AUDIO SYSTEMS	27	4.46	5.69
K368	PERFORM COMPONENT LEVEL REPAIR OF AUDIO EQUIPMENT	41	4.33	5.39
L396	ALIGN PULSE DISTRIBUTION AMPLIFIERS	32	3.77	5.49
L402	ALIGN VIDEO DISTRIBUTION AMPLIFIERS	41	4.28	5.20
L408	ALIGN VIDEO SWITCHERS	30	4.74	7.26
L419	ISOLATE MALFUNCTIONS IN VIDEO DISTRIBUTION AMPLIFIERS	37	4.64	5.40
L438	PERFORM OPERATIONAL CHECKS ON VIDEO SWITCHERS	44	5.00	5.13
Q556	MONITOR WAVEFORM MONITORS	47	4.74	3.67
Q559	OPERATE CAMERAS	41	3.90	4.28
Q571	OPERATE VTR	50	4.05	3.99
Q573	PERFORM COLOR BALANCE BETWEEN STUDIO CAMERAS	33	4.97	5.81
R580	CONSTRUCT CABLE ASSEMBLIES	64	4.67	4.71

* Average Training Emphasis = 2.70 with SD of 1.59 (high = 4.29)
** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 20

COMPARISON OF JOB SATISFACTION DATA BY 304X5
AND COMPARATIVE SAMPLE GROUPS*
(PERCENT MEMBERS RESPONDING**)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	304X5 (N=143)	1987 COMP SAMPLE (N=2,187)	304X5 (N=115)	1987 COMP SAMPLE (N=994)	304X5 (N=183)	1987 COMP SAMPLE (N=1,613)
EXPRESSED JOB INTEREST:						
INTERESTING	76	72	69	73	78	78
SO-SO	12	17	16	14	12	14
DULL	13	11	16	12	9	8
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	75	78	73	77	82	82
LITTLE OR NOT AT ALL	25	22	27	22	18	17
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	71	83	67	81	77	80
LITTLE OR NOT AT ALL	29	17	33	19	24	20
SENSE OF ACCOMPLISHMENT FROM WORK:						
SATISFIED	64	70	63	69	69	71
NEUTRAL	15	13	17	11	8	10
DISSATISFIED	20	17	20	20	22	19
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	54	57	65	67	82	73
NO, OR PROBABLY NO	45	43	34	31	4	10
PLAN TO RETIRE	1	-	-	1	13	16

* Comparative Sample is composed of all Mission Equipment Maintenance career ladders surveyed in 1987 (includes AFSCs 303X1, 303X3, 304X6, 321X1, 427X0, 427X2, and 427X3)
** Columns may not add to 100 percent due to nonresponse and rounding
\- Denotes less than .5 percent

TABLE 21

CURRENT AND PREVIOUS JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING*)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1988 (N=143)	1979 (N=147)	1988 (N=115)	1979 (N=121)	1988 (N=183)	1979 (N=257)
EXPRESSED JOB INTEREST:						
INTERESTING	76	57	69	59	78	71
SO-SO	12	14	16	20	12	13
DULL	13	25	16	16	9	12
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	75	64	73	74	82	80
LITTLE OR NOT AT ALL	25	36	27	24	18	19
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	71	56	67	57	77	73
LITTLE OR NOT AT ALL	29	44	33	40	24	25
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	54	38	65	49	82	57
NO, OR PROBABLY NO	45	59	34	48	4	30

* Columns may not add to 100 percent due to nonresponse and rounding

reenlist increase as members become more senior in their ladder. Also, when compared to the previous survey, today's reenlistment intentions increased by an average of 19 percent. Overall, analysis of job satisfaction indicators suggest incumbents of the AFSC 304X5 career ladder appear satisfied with their job.

Table 22 presents job satisfaction data for the major jobs (clusters and independent job types) identified in the career ladder structure for AFSC 304X5. An examination of this data can reveal the influences performing certain job types may have on overall job satisfaction. Job satisfaction indicators for the specialty job groups suggest members across the career ladder are generally content. Five of the seven jobs responded with high levels of satisfaction. With the largest positive response, 92 percent of the Production/Broadcasting Maintenance Technicians rated their jobs as "interesting". However, over 50 percent of RAM/Weathervision Technicians and TOSS Specialists described their jobs as "so-so" or "dull." As a whole, both RAM/Weathervision Technicians and TOSS Specialists jobs reflect relatively lower leve's of satisfaction when compared to the other jobs. Members of these jobs expressed less utilization of their talents and training, as well as neutral to dissatisfied feelings toward accomplishments achieved from their work. On the other hand, Production/Broadcasting Maintenance Technicians continued to display the greatest overall satisfaction with greater than 80 percent responding positively across all four indicators. Finally, reenlistment intentions across all specialty jobs are high with 50 percent or more indicating they wi reenlist.

ANALYSIS OF MAJOR COMMANDS (MAJCOM)

An analysis of the tasks and duties performed by MAJCOM groups can highlight important differences. The six largest users of AFSC 304X5 personnel (AFCC, MAC, AFSINC, ATC, AFSC, and AAC) were examined and, with the exception of ATC and AAC, no distinguishable differences were noted. Although the types of missions supported are different for MAJCOMs, the tasks and duties involved are not. The ATC and AAC exceptions involve the uniqueness of tasks involved with their specific missions. Alaskan Air Command performs the majority of TOSS functions, with 100 percent of the members maintaining and operating microwave transmission systems. ATC differences lie in the fact that their mission is training-oriented. These dissimilarities were expected. The remaining MAJCOMs' missions involve the entire spectrum of tasks and, therefore, show no significant differences.

IMPLICATIONS

This survey was conducted primarily to provide training personnel with current information on the Television Equipment Repair specialty for use in reviewing current training programs and training documents.

TABLE 22

JOB SATISFACTION DATA BY CAREER LADDER JOBS
(PERCENT MEMBERS RESPONDING)

	GEN TV EQUIP RPRMN CLUSTER (STG056)	PRODUCTION/ BROADCASTING MAINT TECHNS CLUSTER (STG059)	MAINT SUPVRS IJT (STG082)	RAM/ WEATHERVISION TECHNS CLUSTER (STG061)
EXPRESSED JOB INTEREST:				
INTERESTING	76	92	72	41
SO-SO	13	4	12	17
DULL	11	3	16	41
PERCEIVED USE OF TALENTS:				
FAIRLY WELL TO PERFECTLY	86	96	72	45
LITTLE OR NOT AT ALL	14	4	28	55
PERCEIVED USE OF TRAINING:				
FAIRLY WELL TO PERFECTLY	89	95	76	34
LITTLE OR NOT AT ALL	11	5	24	66
SENSE OF ACCOMPLISHMENT FROM WORK:				
SATISFIED	67	83	64	17
NEUTRAL	17	6	20	17
DISSATISFIED	16	10	16	66
REENLISTMENT INTENTIONS:				
YES, OR PROBABLY YES	62	75	76	55
NO, OR PROBABLY NO	38	21	12	45
PLAN TO RETIRE	0	3	8	0

NOTE: Columns may not add to 100 percent due to nonresponse and rounding.

TABLE 22 (CONTINUED)

JOB SATISFACTION DATA BY CAREER LADDER JOBS
(PERCENT MEMBERS RESPONDING)

	TOSS SPECIALISTS CLUSTER (STG072)	VIDEO TAPE RECORDER TECHNICIANS IJT (STG052)	MANAGEMENT PERSONNEL CLUSTER (STG020)
EXPRESSED JOB INTEREST:			
INTERESTING	46	83	79
SO-SO	33	17	12
DULL	21	0	10
PERCEIVED USE OF TALENTS:			
FAIRLY WELL TO PERFECTLY	48	83	77
LITTLE OR NOT AT ALL	52	17	23
PERCEIVED USE OF TRAINING:			
FAIRLY WELL TO PERFECTLY	25	83	73
LITTLE OR NOT AT ALL	75	17	27
SENSE OF ACCOMPLISHMENT FROM WORK:			
SATISFIED	50	67	67
NEUTRAL	27	17	10
DISSATISFIED	23	17	23
REENLISTMENT INTENTIONS:			
YES, OR PROBABLY YES	69	50	77
NO, OR PROBABLY NO	27	50	8
PLAN TO RETIRE	2	0	15

NOTE: Columns may not add to 100 percent due to nonresponse and rounding.

Occupational survey data indicate the AFSC 304X5 career ladder is comprised of several specialized jobs. However, these diverse jobs contain some tasks that are common throughout the career ladder. For example, TOSS Specialists and Production/Broadcasting Maintenance Technicians support two distinct and unique missions. Yet, over 85 percent of the members in each job perform similar tasks, such as remove or replace integrated circuits and perform operational checks on camera systems. Basically, the key differentiating factor between major jobs identified in the structure are based upon the type of mission members support and the level of nontechnical responsibility, such as administration, training, and supervision. These distinctions were identified in the previous survey. Though the 1979 job structure contained differences in organization when compared to the current structure, and despite changes in technology and reorganization, many of the fundamental objectives have not deviated over the last 9 years, suggesting the career ladder structure has remained relatively stable.

The AFR 39-1 specialty descriptions for the Television Equipment Repair specialty were analyzed to determine the adequacy of coverage for career ladder duties. Overall, skill-level groups provided accurate and comprehensive coverage of each specialty job. However, operate functions performed by VTR Technicians, TOSS Specialists, and RAM/Weathervision Technicians are not reflected in the specialty descriptions. Classification personnel should consider revising the current descriptions.

Initial analysis of the STS, examining experience (TAFMS) and DAFSC groups reveal the document was broad in areas, but fairly supported by the percent of personnel performing matched tasks. Additionally, several tasks with relatively high percent members performing were not covered. Likewise, the POI and tentative CTS reflected several unreferenced tasks with high percentage of appropriate personnel performing. Training personnel should look at all areas of the STS, POI, and CTS for possible revision to include specific performance criteria for paragraphs and additional elements to cover high performance tasks currently not referenced.

The examination of responses to job satisfaction questions revealed that satisfaction is somewhat improved since the 1979 survey. The AFSC 304X5 career ladder also reflects similar or slightly lower levels of satisfaction when compared to other mission maintenance specialists. The relatively low perception concerning utilization of training suggests that a review of the AFSC 304X5 training program would be beneficial. Indicators across career ladder specialty job exhibited displeasure among members performing RAM/Weathervision and TOSS functions. This generally lower level of satisfaction among these jobs should alert Air Force managers and supervisors to be aware of these dissatisfying jobs, and attempt to implement measures to improve them.

The findings of this OSR come directly from survey data collected from Television Equipment Repair specialists worldwide. These data are readily available to training and utilization personnel, functional managers, and any other interested parties having a need for such information. Much of the data are compiled into extracts which are an excellent tool in the decision-making process. These data extracts should be used whenever a training or utilization decision is made.

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY CAREER LADDER SPECIALTY JOB GROUPS

TABLE I

GENERAL TV EQUIPMENT REPAIRMEN CLUSTER
STG056

GROUP SIZE: 63
PERCENT OF SAMPLE: 14%
PREDOMINATE PAYGRADES: E-3/4

AVERAGE TAFMS: 43 MONTHS
AVERAGE TICF: 29 MONTHS
PERCENT IN 1ST ENL: 65%

TASKS		PERCENT MEMBERS PERFORMING
F178	INTERPRET SCHEMATIC DIAGRAMS	94
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	94
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	94
F191	REMOVE OR REPLACE PLUG-IN OR SCREW-IN ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR INDICATOR LIGHTS	90
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	89
J317	PERFORM OPERATIONAL CHECKS ON RECEIVER/MONITOR OPERATING CONTROLS, SUCH AS BRIGHTNESS OR CONTRAST	89
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	87
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	86
F176	INTERPRET BLOCK DIAGRAMS	84
F189	REMOVE OR REPLACE INTEGRATED CIRCUITS	84
J315	PERFORM COMPONENT LEVEL REPAIR OF TV MONITORS AND RECEIVERS	81
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	79
H280	PERFORM OPERATIONAL CHECKS ON VTR	78
G199	ADJUST WHITE BALANCES	78
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	76
J312	ISOLATE MALFUNCTIONS IN RECEIVER/MONITOR DEFLECTION	75
H279	PERFORM COMPONENT LEVEL REPAIR OF VTR	63
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	62
E105	COMPLETE PREVENTIVE MAINTENANCE INSPECTION (PMI) LOGS, FORMS, OR CHARTS	60
G202	ALIGN CAMERA ELECTRICAL FOCUS	59
G201	ALIGN CAMERA BACKFOCUS AND TRACKING	57
H273	ISOLATE MALFUNCTIONS IN VTR MECHANICAL SYSTEMS	56
Q571	OPERATE VTR	51
G258	REMOVE OR REPLACE VIDEO CABLE CONNECTIONS	50
H266	ALIGN VTR SERVO CIRCUITS	48

TABLE II

PRODUCTION/BROADCASTING MAINTENANCE TECHNICIANS
STG059

GROUP SIZE: 155
PERCENT OF SAMPLE: 35%
PREDOMINATE PAYGRADES: E-4/5

AVERAGE TAFMS: 98 MONTHS
AVERAGE TICF: 80 MONTHS
PERCENT IN 1ST ENL: 26%

TASKS		PERCENT MEMBERS PERFORMING
F189	REMOVE OR REPLACE INTEGRATED CIRCUITS	97
H280	PERFORM OPERATIONAL CHECKS ON VTR	97
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	96
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	95
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	95
G199	ADJUST WHITE BALANCES	95
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	94
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	94
J317	PERFORM OPERATIONAL CHECKS ON RECEIVER/MONITOR OPERATING CONTROLS, SUCH AS BRIGHTNESS OR CONTRAST	94
G202	ALIGN CAMERA ELECTRICAL FOCUS	92
G201	ALIGN CAMERA BACKFOCUS AND TRACKING	88
H268	ALIGN VTR VIDEO CIRCUITS, SUCH AS PLAYBACK OR RECORD	87
G216	CLEAN CAMERA HEAD LENSES	86
G249	REMOVE OR REPLACE CAMERA LENSES	85
L434	PERFORM OPERATIONAL CHECKS ON VIDEO CHARACTER GENERATORS	79
G207	ALIGN CAMERA SYNC PROCESSING CIRCUITS	78
K370	PERFORM OPERATIONAL CHECKS ON AUDIO DISTRIBUTION	75
K359	ISOLATE MALFUNCTIONS TO AUDIO CABLES	75
K344	CLEAN OR LUBRICATE REEL-TO-REEL MACHINES	73
L394	ADJUST STUDIO PHASE AND TIMING	72
L428	PERFORM COMPONENT LEVEL REPAIR OF STUDIO AND AUXILIARY EQUIPMENT	68
R607	REMOVE OR REPLACE AUDIO EQUIPMENT, SUCH AS TURNTABLES OR AMPLIFIERS	65
R636	REMOVE OR REPLACE VIDEO TEST EQUIPMENT MICROPHONES	65
Q559	OPERATE CAMERAS	63
Q549	CONTROL CAMERA VIDEO LEVELS DURING BROADCASTS OR RECORDINGS	61

TABLE III

MAINTENANCE SUPERVISORS
STG082

GROUP SIZE: 25
PERCENT OF SAMPLE: 6%
PREDOMINATE PAYGRADES: E-6

AVERAGE TAFMS: 159 MONTHS
AVERAGE TICF: 112 MONTHS
PERCENT IN 1ST ENL: 4%

TASKS		PERCENT MEMBERS PERFORMING
B29	DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT	100
D93	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	100
A4	DETERMINE WORK PRIORITIES	96
A15	PLAN OR SCHEDULE WORK ASSIGNMENTS	96
C70	WRITE APR	96
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	96
A11	PLAN EQUIPMENT INSTALLATIONS	92
B24	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	92
D77	CONDUCT OJT	92
D96	REVIEW OJT RECORDS	92
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	92
F178	INTERPRET SCHEMATIC DIAGRAMS	92
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	92
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	92
A1	ASSIGN PERSONNEL TO DUTY POSITIONS	88
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	88
A10	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	88
B36	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	88
B26	DEVELOP WORK METHODS OR PROCEDURES	84
E105	COMPLETE PREVENTIVE MAINTENANCE INSPECTION (PMI) LOGS, FORMS, OR CHARTS	80
G201	ALIGN CAMERA BACKFOCUS AND TRACKING	80
B43	SUPERVISE TELEVISION EQUIPMENT REPAIRMEN (AFSC 30455)	76
G208	ALIGN CAMERA TARGET BEAM CONTROLS	76
C57	EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	72
D78	CONDUCT PROFICIENCY TRAINING	72
E106	DRAFT CORRESPONDENCE OR REPORTS	72
E113	MAINTAIN JOB CONTROL LOGS	68
E121	MAKE ENTRIES ON AF FORMS 1800 (OPERATOR'S INSPECTION GUIDE AND TROUBLE REPORT (GENERAL PURPOSE VEHICLES))	68
B44	SUPERVISE TELEVISION EQUIPMENT TECHNICIANS (AFSC 30475)	60
B39	SUPERVISE APPRENTICE TELEVISION EQUIPMENT REPAIRMEN (AFSC 30435)	56

TABLE IV

RAM/WEATHERVISION TECHNICIANS
STG061

GROUP SIZE: 29
PERCENT OF SAMPLE: 7%
PREDOMINATE PAYGRADES: E-3/4

AVERAGE TAFMS: 58 MONTHS
AVERAGE TICF: 35 MONTHS
PERCENT IN 1ST ENL: 59%

TASKS		PERCENT MEMBERS PERFORMING
F184	PERFORM CORROSION CONTROL ON TV EQUIPMENT	100
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	100
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	100
F192	REMOVE OR REPLACE SOLDERED ELECTRONIC COMPONENTS ON ETCHED CIRCUIT BOARDS	97
F178	INTERPRET SCHEMATIC DIAGRAMS	93
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	93
F191	REMOVE OR REPLACE PLUG-IN OR SCREW-IN ELECTRONIC COMPONENTS, SUCH AS TRANSISTORS OR INDICATOR LIGHTS	93
F193	SOLDER OR DESOLDER CONNECTORS OR HARDWIRE CIRCUITS	93
G258	REMOVE OR REPLACE VIDEO CABLE CONNECTIONS	93
G250	REMOVE OR REPLACE CAMERA PICKUP TUBES	93
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	90
G202	ALIGN CAMERA ELECTRICAL FOCUS	90
G233	ISOLATE MALFUNCTIONS IN MONOCHROME CAMERA VIDEO CIRCUITS	86
E105	COMPLETE PREVENTIVE MAINTENANCE INSPECTION (PMI) LOGS, FORMS, OR CHARTS	83
F176	INTERPRET BLOCK DIAGRAMS	83
G208	ALIGN CAMERA TARGET BEAM CONTROLS	83
F177	INTERPRET COMPONENT LOCATION DIAGRAMS	79
E141	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD	69
E121	MAKE ENTRIES ON AF FORMS 1800 (OPERATOR'S INSPECTION GUIDE AND TROUBLE REPORT (GENERAL PURPOSE VEHICLES))	59
G226	ISOLATE MALFUNCTIONS IN CAMERA POWER SUPPLY CIRCUITS	59
G223	ISOLATE MALFUNCTIONS IN CAMERA INTERCONNECTING CABLES	48
R580	CONSTRUCT CABLE ASSEMBLIES	48

TABLE V

TELEVISION ORDNANCE SCORING SYSTEM SPECIALISTS
STG072

GROUP SIZE: 48
PERCENT OF SAMPLE: 11%
PREDOMINATE PAYGRADES: E-4

AVERAGE TAFMS: 74 MONTHS
AVERAGE TICF: 56 MONTHS
PERCENT IN 1ST ENL: 38%

TASKS		PERCENT MEMBERS PERFORMING
F188	REMOVE OR REPLACE COMPONENTS, SUCH AS TRANSISTORS OR CAPACITORS	100
0514	CLEAN SOLAR PANELS	100
0525	PERFORM OPERATIONAL CHECKS ON TOSS PAN AND TILT UNITS	100
0526	PERFORM VOLTAGE CHECKS ON SOLAR PANELS	100
0512	ALIGN TELEVISION ORDNANCE SCORING SYSTEM (TOSS) PAN AND TILT UNITS98/522	98
0520	LUBRICATE TOSS PAN AND TILT UNITS	98
0521	PERFORM CORROSION CONTROL ON MICROWAVE SYSTEMS	98
0524	PERFORM OPERATIONAL CHECKS ON MICROWAVE TRANSMISSION	98
0528	REMOVE OR REPLACE BATTERIES	98
G201	ALIGN CAMERA BACKFOCUS AND TRACKING	96
0511	ALIGN SOLAR PANEL VOLTAGE REGULATORS	96
0517	ISOLATE MALFUNCTIONS IN TOSS PAN AND TILT UNITS	96
0523	PERFORM OPERATIONAL CHECKS ON MICROWAVE RECEIVING SYSTEMS	96
E141	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	94
F185	PERFORM OPERATIONAL CHECKS ON TEST EQUIPMENT	92
0522	PERFORM OPERATIONAL CHECKS ON ANTENNAS	92
0527	PRESSURIZE MICROWAVE EQUIPMENT, SUCH AS WAVEGUIDES OR TRANSMITTERS	90
G248	PERFORM OPERATIONAL CHECKS ON CAMERA SYSTEMS	85
E121	MAKE ENTRIES ON AF FORMS 1800 (OPERATOR'S INSPECTION GUIDE AND TROUBLE REPORT (GENERAL PURPOSE VEHICLES))	81
F180	ISOLATE MALFUNCTIONS TO POWER SUPPLIES	81
H280	PERFORM OPERATIONAL CHECKS ON VTR	81
G197	ADJUST CAMERA OPERATING CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	79
G208	ALIGN CAMERA TARGET BEAM CONTROLS	73
G219	ISOLATE MALFUNCTIONS IN CAMERA CONTROLS, SUCH AS IRIS CONTROL OR SET-UP	67

TABLE VI

VIDEO TAPE RECORDER OPERATORS
STG052

GROUP SIZE: 6
PERCENT OF SAMPLE: 1%
PREDOMINATE PAYGRADES: E-3

AVERAGE TAFMS: 35 MONTHS
AVERAGE TICF: 20 MONTHS
PERCENT IN 1ST ENL: 83%

TASKS		PERCENT MEMBERS PERFORMING
H269	CLEAN VTR TAPE PATHS, HEADS, AND PINCH ROLLERS	100
H280	PERFORM OPERATIONAL CHECKS ON VTR	100
L438	PERFORM OPERATIONAL CHECKS ON VIDEO SWITCHERS	100
Q547	BULK ERASE AUDIO OR VIDEO TAPES	100
Q550	DUB VIDEO TAPES	100
Q556	MONITOR WAVEFORM MONITORS	100
Q571	OPERATE VTR	100
R580	CONSTRUCT CABLE ASSEMBLIES	83
L437	PERFORM OPERATIONAL CHECKS ON VIDEO PROCESSING AMPLIFIERS	67
Q552	EVALUATE VIDEO TAPES AGAINST ENGINEERING STANDARDS	67
Q564	OPERATE REEL OR CARTRIDGE TAPE RECORDERS	67
Q572	OPERATE VTR EDITORS	67
R600	PERFORM DIRECTED MODIFICATIONS ON VIDEO PATCH PANELS	67
R637	REMOVE OR REPLACE VTR SYSTEMS	67
H268	ALIGN VTR VIDEO CIRCUITS, SUCH AS PLAYBACK OR RECORD	50
H281	PERFORM SELF-DIAGNOSTIC CHECKS ON VTR	50
L434	PERFORM OPERATIONAL CHECKS ON VIDEO CHARACTER GENERATORS	50
Q549	CONTROL CAMERA VIDEO LEVELS DURING BROADCASTS OR RECORDINGS	50
Q561	OPERATE CASSETTE RECORDERS	50
Q578	SET UP AUDIO OR VIDEO PATCH PANELS	50
R614	REMOVE OR REPLACE EQUIPMENT RACKS	50

TABLE VII

MANAGEMENT PERSONNEL
STG020

GROUP SIZE: 52
PERCENT OF SAMPLE: 12%
PREDOMINATE PAYGRADES: E-6

AVERAGE TAFMS: 164 MONTHS
AVERAGE TICF: 120 MONTHS
PERCENT IN 1ST ENL: 0%

TASKS		PERCENT MEMBERS PERFORMING
C70	WRITE APR	85
B24	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	83
A4	DETERMINE WORK PRIORITIES	79
D83	DETERMINE TRAINING REQUIREMENTS	73
D96	REVIEW OJT RECORDS	71
A15	PLAN OR SCHEDULE WORK ASSIGNMENTS	69
C71	WRITE AWARDS AND DECORATIONS RECOMMENDATIONS	69
D93	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	69
B29	DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT	67
B36	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	67
D77	CONDUCT OJT	62
B26	DEVELOP WORK METHODS OR PROCEDURES	60
C57	EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	60
D90	EVALUATE OJT TRAINEES	60
C55	EVALUATE INSPECTION REPORTS OR PROCEDURES FINDINGS	58
A20	SCHEDULE TDY, LEAVES OR PASSES	56
E106	DRAFT CORRESPONDENCE OR REPORTS	56
A2	ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL	52
C46	ANALYZE WORKLOAD REQUIREMENTS	52
C66	INDORSE AIRMAN PERFORMANCE REPORTS (APR)	50
D78	CONDUCT PROFICIENCY TRAINING	48
D88	DIRECT OR IMPLEMENT TRAINING PROGRAMS	48
E120	MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	46